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ABSTRACT

This proceedings of the seventh annual Mid-South Instructional Technology Conference on Teaching, Learning, and Technology contains the following papers: "A Tale of Two Classes: Face-to-Face versus Online" (Carol Wilson); "Best Practices in Organization Highlighting 360 Degree Feedback" (Bonita Barger); "Collaborating Online To Teach Information and Multimedia Literacy" (Lori Buchanan, Ted Jones, and DeAnne Luck); "Communities of Learners: Connecting Students to Maximize Learning" (Maria Clayton); "Developmental Pathways and Technology: The Foundation of Enhanced Intellectual" (Gail Slye and Edward Williamson); "Does Personality Type Effect Online versus In-Class Course Satisfaction?" (Richard Daughenbaugh, David Ensminger, Lynda Frederick and Daniel Surry); "Elementary Algebra + Student-Written Web Illustrations = Math Mastery" (Bette Veteto); "Enhancing Classroom Teaching with Online Web-Based Tools" (Raj Desai and Ted Loso); "Faculty Perceptions of Factors That Facilitate the Implementation of Online Programs" (David Ensminger and Daniel Surry); "Flesh and Bone: Information Literacy, Teaching, and the Connected Classroom" (Kathleen Lant); "From Key Handouts to More Hands On Keys: Planning for the Progressive Use of Technology by Faculty" (Mary Nunaley and David Warner); "Geographic Information Systems and the Global Positioning System: Involving Students in the Formation and Testing of Hypotheses" (Mark Abolins); "It Takes a Village: Considerations for Effective Mentoring Relationships in Technology" (Barbara Beauchamp, Rebecca Burleson and Steve Cockerham); "Performance-Based Assessment in Teacher Preparation Using a Web-Based System" (Debbie Barnes, Jane Mchaney and Aaron Thomason); "Problems and Solutions for Teaching Technology Online" (Joel Hausler and Jay Sanders); "Producing Industrial Videos in the Classroom" (David Baird); "Successful Conversion of a Classroom Program to an Internet Program" (Cheryl Stotts, Richard Smith, Patricia Edwards-Schafer, Cheryl Schmidt, and Jo Ann Smith); "Using Blackboard to Survey Students at Midterm" (Donna Austin and John Austin); "Web-Based Modifications for Students with Special Needs: A Starting Point" (David Currie, Delbert Hall, and Rosalee Seymour); "When Good Intentions Are Not Enough: Motivating Faculty 'Ownership' of IT Initiatives" (Joseph Hughes);"A Web Enabled Graduate Course: Two Perspectives" (James Penrod and Barbara Perry); "Creating and Delivering High Quality Streaming Dial Video" (Steve

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Bonham); "QuickTime Virtual Reality for Web Delivery" (Charles Hodges); and "The Help Desk as a Learning Resource" (Bob Lhota). (Most papers contain references.) (JMK)

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Teaching, Learning, & Technology: The Connected Classroom Proceedings of the Annual Mid-South Instructional Technology Conference (7th, Murfreesboro, Tennessee, April 7-9, 2002)

Middle Tennessee State University

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Seventh Annual
Mid-South Instructional Technology Conference
Teaching, Learning, & Technology

The Connected Classroom

April 7-9, 2002

2002 Proceedings

Featured Speakers

- Tracing the Intersection of Learning and Technology to the Edge of Chaos (ED COOPER, Ph.D.)

Track 1 - Effective Integration of Technology into Teaching & Learning

- A Tale of Two Classes: Face-to-Face versus Online (Wilson)
- Best Practices in Organization Highlighting 360 Degree Feedback (Barger)
- Collaborating Online to Teach Information and Multimedia Literacy (Buchanan, Jones, Luck)

- Communities of Learners: Connecting Students to Maximize Learning (Clayton)
- Developmental Pathways and Technology: The Foundation of Enhanced Intellectual (Slye, Williamson)
- Does Personality Type Effect Online Versus In-Class Course Satisfaction? (Daughenbaugh, Ensminger, Frederick, Surry)
- Elementary Algebra + Student-Written Web Illustrations = Math Mastery (Veteto)
- Enhancing Classroom Teaching with Online Web-Based Tools (Desai, Loso)
- Faculty Perceptions of Factors That Facilitate the Implementation of Online Programs (Ensminger, Surry)

- Flesh and Bone: Information Literacy, Teaching, and the Connected Classroom (Lant)
- From Key Handouts to More Hands On Keys: Planning for the Progressive Use of Technology by Faculty (Nunaley, Warner)
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- It Takes a Village: Considerations for Effective Mentoring Relationships in Technology (Beauchamp, Burleson, Cockerham)
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- Problems and Solutions for Teaching

Technology Online (Hausler, Sanders)

- Producing Industrial Videos in the Classroom (Baird)
- Successful Conversion of a Classroom Program to an Internet Program (Edwards-Schafer, Schmidt, Smith, Smith, Stotts)
- Using Blackboard to Survey Students at Midterm (Austin, Austin)
- Web-Based Modifications for Students with Special Needs; A Starting Point (Currie, Hall, Seymour)
- When Good Intentions Are Not Enough: Motivating Faculty "Ownership" of IT Initiatives (Hughes)

Track 2 - Technology Tools for Use in the Classroom

- A Web Enabled Graduate Course: Two Perspectives (Penrod, Perry)

- Creating and Delivering High Quality Streaming Dial Video (Bonham)
- QuickTime Virtual Reality for Web Delivery (Hodges)
- The Help Desk as a Learning Resource (Lhota)

Track 3 - Policies, Ethics, Standards, and Legal Issues

- No proposals found for this track.

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A Tale of Two Classes: Face-to-Face versus Online

By: Carol Wilson
Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

A study of student achievement and satisfaction in two sections of an advanced computer science course, one face-to-face and the other online.

PROCEEDING

Are the distinctions between classroom, web-based, and online learning disappearing? The effect of the instructional media on student achievement has been vigorously debated in articles with expressive titles such as: "The 'No Significant Difference' Phenomenon" (Russell, 1997), "A Significant Difference" (Orr, 1997), "What's the Difference?" (Phipps & Merisotis, 1999), and "The Difference Frenzy and Matching Buckshot for Buckshot" (Brown & Wack, 1999). To explore the distinction between classroom and online learning, a study was conducted of student achievement and satisfaction in two sections of an advanced computer science course. Both sections were taught by the same instructor, one online and the other face-to-face. All students used the same textbook, had access to the same web-based resources, and completed the same assignments. The face-to-face section had 150 minutes of lecture per week and students had the opportunity to ask questions during this time. The online section was provided with lecture notes and students asked questions via e-mail or phone. The on-line section was composed of eight undergraduate students and eight graduate students, while the face-to-face section was composed of 15 undergraduate students and 11 graduate students.

Student achievement was measured by the total points earned by the student. The achievement in both sections was equivalent to earning a grade of B+. The average number of points earned by students in the online section was 277 out of 310 possible points, 89.4%. The average number of points earned by students in the face-to-face section was 270 out of 310 possible points, 87.2%.

Students completed a short survey in which they rated their level of satisfaction on a five-point Likert-type scale ranging from 5 for "very satisfied" to 1 for "very dissatisfied". Both the online and face-to-face students reported that they were satisfied with the course (M = 4.20 & M = 4.25) and the content material provided on the course website (M = 4.22 & M = 4.10). The online students used the web resources substantially more than the face-to-face students (M = 486 page assesses & M = 290 page accesses). Student/teacher communication is critical and both sections were more than satisfied with access to the instructor (M = 4.67 & M = 4.70). The overall satisfaction level of both sections was almost identical.

Student Satisfaction with Various Aspects of the Course

	Online		Face-to-Face	
	M	SD	M	SD
overall satisfaction with the course	4.20	0.91	4.25	0.64
content material provided on the course website	4.22	0.44	4.10	0.55
access to your instructor	4.67	0.71	4.70	0.47
test material reflects the learning objectives	4.56	0.53	4.45	0.60
weekly labs	4.44	0.53	4.00	0.86

Note: 5 = Very Satisfied, 1 = Very Dissatisfied

The online section reported they were likely to take another online course (M = 4.0, SD = 0.5), while the face-to-face section was tentative (M = 3.06, SD = 1.30). Both sections cited a flexible schedule as the main advantage of taking an online course and missing the lecture format as the major disadvantage.

As often happens, there were no statistically significant differences in achievement or satisfaction between the two sections. "Effectiveness studies have been quite consistent in showing that when used in business, military training, and adult learning, there is no significant difference between distance learning and traditional instructional methods, and student attitudes are generally positive about the experience." (Distance Learning Fact Sheet, 1997)

References

Brown, G., & Wack, M. (1999). The difference frenzy and matching buckshot for buckshot [Online], 4 pages. Available: http://horizon.unc.edu/TS/reading/1999-05.asp [1999, May 11].

Distance learning fact sheet (1997). [Online], 2 pages. Available: http://gopher.usdla.org/dl.html [1997, Oct. 15].

Orr, B. (1997). A significant difference [Online], 5 pages. Available: http://teleeducation.nb.ca/anygood/asigdiff.shtml [1998, Jan. 31].

Phipps, R., & Merisotis, J. (1999). What's the difference? A review of contemporary research on the effectiveness of distance learning in higher education. A Report from the Institute for Higher Education Policy, April 1999 [Online], 42 pages. Available: http://www.ihep.com/PUB.htm [1999, June 20].

Russell, T. I. (1997). The "no significant difference" phenomenon [Online], 17 pages. Available: http://teleeducation.nb.ca/phenom/ [1998, Jan. 31].

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Best Practices in Organization Highlighting 360 Degree Feedback

By: Bonita Barger

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: Beginner

Proceeding

ABSTRACT

How do you organize a course to bridge theory and practice? How do you include on going student feedback? This session highlights one such course that was recognized by a Tennessee Board of Regent /Regents On-line Degree Program (RODP) Panel Review as "one of the models for a well organized online course." The presentation discusses the pedagogy underlying the course entitled Human Resource Management and demonstrates student-student, student to instructor, instructor to student on going feedback throughout the 12 week offering.

HOW THIS COURSE WORKS

Human Resource Management (HRM) is grounded in multiple learning theories (Dewey, 1933, Kolb, 1984) . I believe that learning is a process formed through curiosity, inquiry, and grounded in experience to create knowledge. The logic is one of practice-theory-practice (Kolb, 1984). The theory here is inspired by the challenge to practice.

THE JOURNEY

This learning journey is simple enough:

- Buy the bundle-includes *Managing Human Resources* Bohlander/Snell/Sherman with InforTrac College Edition, access code for Thomsonlearning, and CD Roms;

- Set aside 20-30 minute blocks of time anytime to learn the materials and do the assignments;
- Take tests and quizzes when "you are ready";
- Schedule virtual meeting times with team members to complete assignments;
- Present your deliverables on line; and
- Assess yourself and others.

THE STRUCTURE:

You can think of this course as a series of rooms or blocks. It is designed so you can work in 20-30 minute periods whenever you want. You move between the hard copy textbook, web text, auditory and visual information on CD's and visit/analyze an organization in your local community.

THE KNOWLEDGE:

The knowledge component is designed in two blocks: **Content and Process**

The **Content** knowledge block focuses on the facts, functions, and policies of Human Resource Management. The **content** is in your textbook, in the re-inforce course content section, and re-view with self tests section.

You "read", "re-view with self- tests", and when ready "re-exam with graded tests".

The **Process** knowledge block focuses on learning how to learn, working in a team, managing a project and researching an organization. The **process** is outlined in weeks 1-7 in the re-inforce course process section and in apply with assignments.

You "do" & "apply your knowledge" through transactions with teammates & analysis of an organization.

THE CONTENT:

- **READ** the textbook.
- **RE-INFORCE** the chapter material with POWERPOINT PRESENTATIONS.
- **RE-VIEW** the content in a STUDY ROOM with self-tests to determine your readiness to take the graded tests.
- When you think you are ready, you **RE-EXAM** with graded quizzes and tests.

THE PROCESS:

- You **RE-INFORCE** the process material with POWERPOINT PRESENTATIONS in weeks 1-7;
- You **LISTEN** to the CD lectures;
- You **VIEW** the sample CD Projects.
- You **DO** the assignments;

THE FORMAT:

The course homepage has a syllabus, lectures, quizzes, exams, study tools and evaluations all designed to meet the objectives.

Syllabus:

The **Syllabus** outlines the basic guidelines, policies and procedures for the course.

Lectures:

Content lectures can be found for each chapter **in re-inforce course content and on the CD ROMS**. These are summary lectures. You'll need to read the textbook chapters first to understand the summaries. The CD ROM version will allow quicker access.

Process lectures can be found in weeks 1-7 **in re-inforce course content and on the CD ROMS.** These are summary lectures with my voice highlighting key points.

CD ROM video's provide mini-lectures highlighting key concepts such as working together on line, ethics, and project management.

Content Quizzes:

Self-test quizzes can be found in your STUDY ROOM **re-view with self tests biock**. You will need your *access code attached to the course bundle* to enter this room. Follow the login directions.

The STUDY ROOM was designed for you to "test out" how you are comprehending the content knowledge. In the room you will find, chapter summary materials, True/False quizzes, Multiple Choice quizzes, Matching and Application quizzes to **PREPARE** you for the **graded** tests and quizzes. In addition, there are flashcards, a glossary and additional web links if you need them. The most exciting feature is the fact that you can visit this STUDY ROOM as often as you like to quiz yourself and determine when you are **READY** to take the **graded** quizzes

Content Graded Quizzes: There are 10 timed, graded quizzes. You have only one try and must receive 80% correct to gain a grade. When you are READY, **enter the Re-evaluate with graded tests, quizzes, & team evaluation block** and take the quiz(zes). The graded quizzes and exams are closed book with no assistance. In taking the course, you are on your **honor** to "not give or receive help on them". Consult the Syllabus for specifics. If you have any questions, please contact me.

Content Exams:

There are 3 timed, graded exams. You can take each exam only one time. The score you receive will serve as your exam grade. When you are READY, **enter the Re-evaluate with graded tests, quizzes, & team evaluation block** and take the exam(s). The graded quizzes and exams are closed book with no assistance. In taking the course, you are on your **honor** to "not give or receive help on them". Consult the Syllabus for specifics. If you have any questions, please contact me.

Process evaluations:

Remember that there are 2 knowledge components to this course-**content and process**.

Quizzes and exams evaluate your **content** knowledge.

There are also 4 **process** knowledge evaluations to the course found in the **Re-evaluate with graded tests, quizzes, & team evaluation block**:

1. Team Participation Evaluation,
2. Evaluating Potential Projects,
3. Team Evaluation, and
4. Abelard-Overall Course Evaluation.

1) **Team Participation Evaluation** is designed to provide your teammates with feedback on how you are working together IN YOUR GROUP. Details can be found in the Syllabus & Process PowerPoint presentation #1.

2) **Evaluating Potential Projects** is designed to provide the team with criteria to determine if your project is feasible. Details can be found in Assignment #2 and Process PowerPoint presentation #2.

3) **Team Evaluation** is designed to provide your classmates with feedback on the effectiveness of their deliverables. Details can be found in the Syllabus, Process PowerPoint presentation #1 and Assignment #3.

4) **Abelard** is designed to provide the instructor with feedback on overall course effectiveness and will be administered at the end of the course.

Assignments:

Apply with assignments block holds 8 assignments designed to assist you and your teammates with **doing** your project and **applying** the content and process knowledge.

CD ROM has samples of student projects. **BUT** these are projects that were created for face-to-face classroom presentation. There are **no** samples of virtual student projects.

You and your teammates are the **PIONEERS.** The assignments will direct you in creating your projects. Your **challenge** will be to present your project (deliverables) on line. YOUR projects will become the ***NEW STANDARD*** that could be on the next edition of the CD's for this course.

Study Tools:

Consider the **study tools** block on the course menu as your entrance into a MAIN virtual library of resource materials. Remember you also have a smaller **customized** library (web links) in your STUDY ROOM (**Re-view with self-tests**) that reinforces **content** knowledge.

This study tools library has it all--**centralized** on one page---Library Resources---Help Lines, Business Journals/Magazines---General Human Resource Management/Career Resources---Specialty Business and Compensation Resources.

THE TECHNICAL TOOLS:

Now that you have read about the course structure and learning theory, take time to understand the technical tools that will assist you in navigating the journey.

The Student Tour describes the WebCT's tools and illustrates their default icons.

WebCT Tutor WEBCT Virtual Library Tour

IN SUMMARY:

In summary, you have access to peers, the instructor and materials to complement the text chapters. The flashcards, quizzes, additional web links, threaded discussion, course calendar, chat, e-mail and CD lectures provide a broad based learning environment to gain intellectual capital and apply it in a "real organization".

I wish you a pleasant journey as you read, reflect and apply your new knowledge of Human Resource Management.

(Print off this roadmap as a reminder of "how the course works". Keep it with the Syllabus and other hardcopy materials as reference.)

REFERENCES:

Dewey, J. (1933). How we think. Chicago: Regnery.

Kolb, D. A. (1984). Experiential Learning: Experience as the source of learning and develoment. Englewood Cliffs, NJ: Prentice-Hall.

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Collaborating Online to Teach Information and Multimedia Literacy

By: Lori Buchanan, Ted Jones, DeAnne Luck

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

A graduate communications course in multimedia literacy uses a completely online environment to assemble faculty and curriculum resources normally unavailable in traditional classrooms. Guided by a teacher/coordinator, a librarian teaches information literacy by examining Internet copyright and fair use issues, ethics, and the evaluation of free-and fee-based materials. A Webmaster teaches Web site design principles and management for group projects, and each student creates a Web portfolio. Students and faculty offer evaluations and recommendations for the course in the future.

While online courses offer access to education to those who would otherwise be unable to continue learning, the online environment offers both challenges and opportunities for educators to explore and expand teaching practices and resources. In Web-based courses, educators are forced to look outside the classroom "box." The graduate communication course in multimedia literacy described here began as a series of challenges. As approaches were taken to maximize Web environment opportunities, solutions began to be found. New alliances for teaching were forged in the process.

The Challenge

For those with access to multimedia laboratories, technical support, and expertise in various multimedia software programs, teaching a graduate level course in multimedia literacy would likely be a highly technical enterprise. However, teaching multimedia literacy entirely online without such technological resources demands a significantly different approach. Major issues to be dealt with include course materials, the technology limitations of working without face-to face contact with students, software issues, and the wide range of student experience in the use of technology. The following problems would need solutions if the course were going to work:

Course materials: At present, the most widely used text for multimedia literacy training basically consists of a series of detailed software tutorials appropriate for a technology lab. Our online course would have no lab; in addition, the software platform for that particular text is incompatible with the Blackboard software that would house our class. So, what course text would we use to teach?

The technology environment: The Blackboard software used to package and manage online courses at our university adds an additional layer of issues and technological challenges and limitations. How could this online environment possibly substitute for a multimedia lab?

Course software and support: With students working from a variety of home computers, it would be impossible to choose appropriate applications software, such as FrontPage, and to provide support for students to learn as they might in a lab. What approach to teaching multimedia could we take that didn't depend on teaching or learning specific applications?

Student experience and resources: A number of students had undergraduate degrees in communications and had already completed other graduate courses, some online. Others were new to online learning and graduate courses, and one had just gotten his first computer three weeks before. How could we approach the course so that everyone would benefit educationally yet not be overwhelmed technologically?

So, the challenge for this course was: How could we teach a credible multimedia literacy course without a text, or labs, or software to students with widely diverse backgrounds and experiences both in communications and technology?

Rethinking content

We had to return to the drawing board to conceptualize a new approach to the topic. We started with a definition for our subject, multimedia literacy. Our revision began as a theoretical strategy. Later it incorporated elements we'd used in previous team-taught interdisciplinary courses as well.

Our definition for multimedia literacy, synthesized from the meanings of the words *literate, visual literacy*, and *multimedia* (Lexico LLC, 2002), became *having the knowledge or competence needed to recognize and understand ideas conveyed through various media*. The definition gave us a new direction. This course would be about multimedia concepts and ideas, not software tutorials and labs, an approach we believed to be more suited to a graduate level course in communications. But what kind of instructional strategies would ground students in multimedia concepts, as well as provide them with some practical experiences in which to apply the concepts? The instructional strategies used in the development of this course emerged by combining ideas from several prior experiences.

In 1994, Ted Jones, the chief instructor for this course, co-wrote an article (Turner and Jones, 1994) inspired by a then-current business concept, an idea called the *virtual corporation* (Bryne, Brandt, and Port,1993; Davidow and Malone, 1992). The premise was that in order to remain competitive in a market that demanded speed, quality and economy, businesses must join together to assemble the expertise they need to create viable products. This cooperation by means of communication technologies would result in a virtual corporation created to address a specific need. In such a corporation, each company would contribute its particular strengths to produce an end product. Telecommunications and information technologies would make the virtual corporation possible.

As Turner and Jones (1994) discuss, reflection on this idea led to a question and an experiment. What if the word "corporation" were replaced by the word "university?" The newly edited text included the following:

"Each university that links up with others to create a virtual university will be stripped to its essence. It will contribute only what it regards as its core competencies.... It will mix and match what it does best with the best of other universities" (p. 2).

This idea of a virtual university in which core competencies are selected and combined was the first step in the development of the course.

The second step that influenced course development derived from the communication component of an interdisciplinary writing, speaking, and researching course taught in the Heritage Program at Austin Peay State University. In this course, freshmen not only write essays on the academic disciplines, they also learn information competencies, including but not limited to library research skills. Finally, they study speaking techniques to turn their essays into speeches. Working alongside Heritage librarians, faculty learn first hand how information and information access are expanding in a dynamic way. The idea of teaching collaboratively with librarians who deal with information literacy and multimedia, Lori Buchanan and DeAnne Luck respectively, took us one step further toward this course.

Timing is everything. Lori had recently begun an information literacy initiative on campus and was looking for faculty to help her. As information literacy is important to the communication aspect of multimedia literacy, we envisioned a joint project that would teach graduate students the current critical skills they would need to access, retrieve, evaluate, and use information legally and ethically.

So much for information literacy. But how about multimedia literacy?

Working from our definition, we decided graduate students would benefit most from a broad knowledge of what works and what doesn't in multimedia environments. Given the online nature or the class, and the natural choice of the World Wide Web as our source of classroom materials, DeAnne Luck, the Austin Peay State University Library Webmaster, was the right person to teach students Web site design and construction. Through the use of materials readily available on the Web, course content could be provided within the Blackboard online environment in place of a printed text.

So, our multimedia literacy class would use the World Wide Web within an online environment to explore concepts of information and multimedia literacy. The librarians were able to distill this vision into critical readings and assignments which included threaded discussion questions, short essays, an annotated bibliography assignment, and the creation of a group Web site. During the class, students would proceed logically from locating and accessing content to the design and construction of Web sites using those resources. The course would end with a capstone project of individual student Web portfolios, an online collection of written and multimedia artifacts and supporting materials. A professor at another university agreed to lend his newly written Web portfolio text in manuscript form online for the class to reference. He also agreed to be available to critique the final Web portfolios.

Let us now examine some specifics of the information and multimedia literacy components of the class.

Information Literacy module

Using the five Association of College and Research Libraries Information Literacy Competency Standards (2000), Lori developed assignments in which students found the information needed to construct their group Web site and individual Web portfolio. Students accessed the needed content, evaluated the information, and incorporated it into their group Web site project in an ethically and legally sound manner.

Weekly overviews of the assignments were posted within Blackboard These overviews contained appropriate content readings available online via the Web, library databases, or electronic library reserves. Both Web and print-based information were examined and compared.

Instructors created and posted threaded discussion questions, such as "How do you think creators of information content should approach their work in the future?," which prompted students to think critically about the readings. Often students referred to each others' messages when addressing the questions listed, a move that was encouraged but not required. Responses were noted and graded using the Blackboard grade management tool. Instructors posted feedback once the week's discussion ended. The feedback was a synthesis of student discussion; however, instructors also included additional points. One such point, for example, was that libraries must shift from ownership of sources to providing access to sources because information volume and cost are increasing while library funding is decreasing.

When evaluating Web sources, students considered publisher and author, information accuracy and currency, confirmation of information from a second independent source, the purpose of the Web site, approval from a watch group, and timely response to e-mail queries. In answer to the question "What has been your experience with the quality of Web-based information compared to print information sources such as journal articles and books?" students responded that Web-based information was more easily accessible, understandable and, in some cases, of comparable quality to print-based information, particularly, the Web-based library databases. However, they also observed that there was too much information of questionable accuracy on the Web.

As a final assignment for this first class module, students were to provide an annotated bibliography. Students selected three sources available via the library Web site and on the Web using the evaluative criteria covered above. The bibliography was to support the Web portfolio they would create as a final project.

Multimedia Design module

The second module of the multimedia literacy course moved from information literacy to a unit on Web design and organization. First, a series of readings and discussions taught the do's and don'ts of Web site organization, design, and management. Assignments, based on our definition of multimedia literacy, focused on planning and assessment rather than on learning HTML code. By having students use these readings to create group Web sites and individual portfolios, they practiced using information in an electronic environment rather than in completing a more traditional assignment, such as writing a research paper. What better way to learn what works and doesn't work in a Web site than by going through the process of creating a site?

To begin the Web site design project, students were assigned to groups. The purpose of the group work was to give the students more interaction with each other, provide peer assistance to those with fewer technical skills, and generate discussion and new ideas.

The project started with readings on Web usability, accessibility, and information architecture principles. These readings, and the related exercises and discussion questions, challenged students to examine how they themselves use the Web. Using their own experiences and the evaluation criteria previously learned as a starting point, the students looked at the flip side: Which design and management principles create a good user experience and evaluation? Another assignment covered the importance of accessibility for all users. An exercise in viewing Web pages with a text-based browser allowed students not only to experience the frustration of visually impaired users dealing with bad design, but it also reinforced the value, or lack thereof, of multimedia elements..

Over the next two weeks, the students defined their site's mission, audience, and content areas; read about Web site organization, structure, and navigation; and designed these elements for their site. The planning elements were all brought together into a site 'blueprint,' a somewhat graphical representation of their site's organization, navigation, content, and links. The blueprint not only emphasized the importance of organization and planning (much like an outline of a written paper), it also enabled students to better visualize the organization of other sites, making them more efficient at accessing information.

When the students finally began to create their pages, and the content to go on them, the class readings discussed what particular writing style is best suited for the Web; the current, best, and future uses of Web-specific multimedia elements; and the use of hypermedia to create new connections not available in other media.

Although technological problems plagued many groups when they created their sites, and one group had problems working together, all but one of the Web sites turned out well. The students then reviewed their peers' Web sites, using the evaluation criteria and design principles previously learned.

For the final assignment, students put together Web portfolios that included materials they had created in their academic work, professional fields, or other creative endeavors. As individual projects, the Web portfolios gave students the chance to apply the technological skills they learned from others in their group. Many took advantage of the chance to create a Web site highlighting their own interests, talents, and even a home business.

Course Evaluations

Students were given the opportunity to evaluate the course by means of both an online survey and additional written comments. The sixteen survey items covered demographic information about students (3 items), course design (4 items), content (5 items), materials (2 items), and grading (2 items). Thirteen of fourteen students answered the survey, and ten students posted additional comments. The Blackboard course software made it possible to record student participation in each of the surveys without revealing student identities. Percentages quoted combine the "strongly agree" and "agree" response options. Remaining options were "neither agree nor disagree" "disagree," and "strongly disagree."

The fourteen students in the class were widespread in their experience with online courses. While a large majority (85%) had taken communications classes before, and almost two-thirds of the class had taken graduate courses before (62%), just over half (54%) were taking their first online class.

A large percentage of students indicated they felt the class as a whole was appropriately designed for an online format (85%) and that the information literacy, Web site design and construction, and Web portfolio modules built well upon each other (69%). Most felt that having several instructors made the course a richer experience than having only one instructor (77%), although there were some concerns expressed in the written comments. Three students noted they found having three instructors "confusing" at times. "However, the different experiences and backgrounds of the instructors broadened the interpretation and ... [delivery] of the material." Another student said, "I really enjoy having a collection of instructors. I wish that regular classes were taught that way. It truly does add to the course." Most students felt that working in groups provided interaction with other students that they would otherwise have missed in an online class; however, some expressed logistical and task assignment concerns with the group projects. Several students observed that "it is very difficult to work online with a group" while one said "I strongly feel that…putting us in groups with stronger members…really assisted…those of us who were not as [computer] literate." Another noted that "most of the work …fell to the 'expert.'" Several suggested that the group Web site project "have a major overhaul" or be rethought, and that the final individual projects might be done first "to ensure that everyone knows the basic nuts and bolts before…[being] thrown into a group in which you will never meet the people…[C]ommunication is already difficult even without the technical knowledge barrier." Another thought the group Web project should "be limited to groups of only two because of … time…[T]he third person was never available." One student summarized the experience by saying "I understand that the group project was meant to give the class more interaction, but it forced us to get together and meet, which kind of defeats the purpose of an online class." Another student suggestion, expressing the noted ambivalence toward working in groups, was to "have the next class create just one site, but expect more out of the site."

In considering course content, about two-thirds of the class (61%) noted that the information literacy topics integrated well with what they'd studied in other communications classes, although one noted that while "interesting and well thought out…[information literacy] could have been related better to the [course] topic and not just library issues." When asked if the approach to multimedia maximized what could be learned in an online class, students more readily agreed (77%). Students found the Web portfolio component a logical extension of what had been learned in the first two units on information literacy and multimedia design and organization (77%). "The coursework for this class led nicely to the final project. It made the final project easier to do, knowing all of the material we had covered previously." However, several students made appeals to "[b]egin reading the Web Portfolio book at the beginning of the semester. It would have been helpful in choosing our topics"…[and] building …[the] group Web sites." Most students felt that the assignments built on each other (61%), and all agreed that the information in the class was practical (100%).

Students were also unanimous in their approval of having the materials provided online rather than by having to buy textbooks (100%), and found the online readings to be appropriate for the class (100%).

Almost all students found the assignments reasonable for a graduate level course (92%), and the grading policy of assigning points for posted essays, discussion thread responses, and Web site creation was deemed to be fair (92%).

Though not asked to evaluate the course and the teachers specifically in the survey, a number of students expressed appreciation of both in their written remarks. "I was very pleased with this online course…I know you all have worked very hard to offer this particular class and I appreciate it very much." Another said, "I have truly enjoyed this class. I was terrified at the beginning. I have overcome a great deal of fear and paranoia about technology by having this class. This class has taught me a tremendous amount about using this computer, and quite a fair amount about portfolios." Others expressed enjoyment tempered with some frustration: "I enjoyed the class, but think there was just too much material and not enough time to really focus on each aspect."

Lessons Learned

In any new undertaking, there is always the unanticipated. As a result of our experience in this course, we have several observations and suggestions to share.

Online courses take much more time than regular courses, particularly the first time through. Not only must materials and assignments be designed and formatted for the medium, but the interaction among faculty and among faculty and students takes much more time for all concerned. A question that might be fielded in a few seconds in class may require several minutes to write as an e-mail query and response. Similarly, grade keeping can go from being a mark on a roll sheet to an entry in the online environment software. There are some advantages to this, to be sure, but learning software does require additional time.

The online environment is not like anything you're used to. Think of this, for example: Online teachers may never meet together with students, see their faces, or hear their voices; so the visual and aural feedback teachers take for granted in class is not available in the same way online. Constantly question what you're doing and how it's working. Maximize advantages and minimize disadvantages by remaining flexible and actively seeking feedback from all involved.

A uniform way of posting assignments and reading materials is of utmost importance in team-taught courses. This may sound like a no-brainer, but in a new technological environment, even small variations in doing things can cause students to miss all or part of an assignment. We found that writing all assignments in red, particularly when they were integrated into the content materials, helped to draw attention to them and clarify them for students.

To address these observations, we suggest the following:

Post readings, assignments, discussion questions no more than a week or two ahead to provide yourself the flexibility to redirect focus, if necessary.

Schedule due dates consistently, assign points for work posted on time; eliminate *the opportunity for students to respond after a certain date.* Regulated scheduling helps students organize their work so they remain current. We gave a Monday noon deadline for posting the previous week's assignments. However, in the future, we may move that to Wednesday morning to allow students who do class work on the weekend the opportunity to have questions to instructors answered before the submission deadline.

Finally, collaborative work is extremely beneficial to students if teachers are well matched and responsibilities well defined. In our particular case, we have worked together for a number of years to develop modules aimed at processing content, so cooperation was not an issue for this class. However, our work would have been much more difficult, if not impossible, had we not trusted and shared what we could and left each other alone to do what each of us did best.

Conclusion: As you probably know, realistic teachers are moving from being sages on stage to being guides on the side. Certainly, as instructors we did that for this course. The Internet and Web have made increasingly diverse numbers and kinds of resources available; but the responsibility of scholars is greater than ever, because the quality of resources is anything but predictable. Up-to-date information competency and research skills are more critical than ever. Fortunately, the online environment, so limited for teaching this course in a lab tutorial context, provided the perfect opportunity for this class. Students could learn the necessary information and multimedia literacy skills online from librarians who otherwise would be limited in their ability to guide and instruct.

To conclude, here are some final quotes from the revised text on the virtual university: "The characteristics of the new university model are: excellence, opportunism, no borders, technology, and trust....The virtual university will demand a different set of skills from all managers....They will have to build relationships, negotiate 'win-win' deals, find the right partners with compatible goals and values, and provide the temporary organization with the right balance of freedom and control" (Turner and Jones, 1994, p. 2). In the multimedia literacy course discussed here, this model was put to the test and found not only workable but successful.

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Communities of Learners: Connecting Students to Maximize Learning

By: Maria Clayton

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: Intermediate

Proceeding

ABSTRACT

Faculty engaged in instruction integrating the web continue to invest time to adapt different technologies towards meeting the mandate of increased interactivity. We approach this venture gladly in the name of engaging our students more meaningfully with course content, with one another, and with us; however, we need to hear from each other about what the results of our efforts show, what the pay off is for the investment of one of our most precious commodities—our time.

PROCEEDING

Participants in the ongoing dialogue about instruction using the web are by now well aware of the many avenues available for integrating interactive opportunities in these courses—whether in traditional courses that enlist the web for expanding classroom walls or in courses that rely on it exclusively. The National Education Association Policy on Distance Education identifies two key objectives in using instructional technology: 1) "Preserve a sense of community in colleges and universities—especially among teachers and learners . . ." and 2) "Sustain or increase the quality and frequency of communication between students and teachers—and within these groups" (National, Preface 6). At their best, web-assisted and web-based courses provide "the opportunity for students to move from individual to collaborative learning, from the consideration of ideas in isolation to an examination of their meaning in a global context" (Gilbert and Green 35). Our mandate is clear—to create learning communities through interactivity. However, we faculty are also painfully aware of the substantial time required for developing, integrating, and administering interactive elements in our courses. As we continue to invest time to adapt different technologies towards this aim, all in the name of engaging our students more meaningfully with the material, with each other, and with us, we need to hear from each other about what the results of our efforts show, what the pay off is for the investment of one of our most precious commodities—our time.

Exactly how do students benefit? In my own web-assisted and web-based courses, I have been concerned over issues that traditionally plague Distance Learning courses, online formats among them: student isolation and anxiety levels, student retention, and student outcomes. While I use the web to varying degrees in all my courses, I focus here on my web-assisted, first-semester, freshman composition course and on my web-based, first-semester, sophomore introduction to literature course. Beginning in the summer 2001 semester for the web-based literature course and in the fall 2001 for the web-assisted composition course, I have expanded the already substantial use of interactive tools to include personal homepages for students and small group features—individual group email, discussion board, virtual chat, and file exchange, all through Blackboard's CourseInfo. Would this increase have any impact on my students in these three areas of concern?

When it comes to student isolation and anxiety levels, critics of using the web in instruction point to the "distance" created by the, at least partial, loss of face-to-face contact as the primary contributor. Writing about her own experiences with her online students, Linda Peters suggests that students affected in this manner, "miss the social contact and face-to-face interaction that an institutional setting provides." However, others like Fred Hurst in "The Death of Distance Learning?" point out that often "there's more distance between the faculty member and the students in a large lecture hall than between a distance learning student and faculty member who are a mouse click apart online" (59). It seems to me that most of us involved in using instructional technology, in whatever format, realize that the presence of the teacher is key, however manifested, and that student isolation and anxiety levels can be minimized and controlled if that presence is clearly felt. *e-Learning Solutions* Manager, Karen Frankola argues that "the emotional connection between instructor and student may be even more important for online courses than in the classroom" (16); she goes on to add that online students often receive many more instances of personal recognition for their work than traditional students (16). Once personal connections are made by students through the use of technology, levels of anxiety are reduced, as they perceive themselves part of a learning community.

From my own students, I have received primarily positive and encouraging feedback through an informal survey on the effects of interactivity (see Appendix) and through evidence of increased appreciation for the resulting collaborative exchanges. For example, in my web-assisted composition course, I have grouped students for the last two semesters from each of my two sections into cross-class peer groups, using CourseInfo's small group features—email, discussion board, virtual chat, and file exchange. These students have established small communities of writers, for whom a key goal is to help individual members expand his/her concept of audience. Their rating for access to one another via email and discussion boards earned high marks—ranging from 100% to 56% in the two, most positive ratings (Critical and Useful). Learning about each other via the personal web pages was rated as primarily Nice to Have, while the virtual chat feature was fairly evenly split between the most positive and least positive ratings. These two ratings are understandable because these students do have face-to-face access to one another. In general, the increased access to peers and instructor alike (expanded classroom walls) was evaluated in positive terms in the comments provided ("Gives me access to a lot more than just the teacher"; "More opportunities to get assignments done well"; "It helps me keep up w/homework & allows me to access my peers if I have a problem"), with only a few exceptions, bemoaning the added effort expended: "there is too much to do just for writing a paper."

Similarly, the web-based introduction to literature students presented a positive attitude towards the beneficial effects of increased interactivity. In fact, not surprisingly, their rating of the value of the CourseInfo features was even higher than those of their web-assisted counterparts. For them, these features are a lifeline. With the exception of the personal web pages, which received an 88% response as Nice to Have, the other eight features listed on the survey received between 100% and 72% in the top two ratings, with the virtual chat being the least popular. Written comments ranged from claims of being lost without the interactive capabilities to "By seeing the ideas of other students, I can reevaluate and better articulate my own." Even comments made to each other on the small group discussion area also shed light on the importance of keeping them linked. In one particularly active group, the exchange among the three peers was wonderful:

Once again, I've enjoyed reading your comments :)

I'm very glad I was assigned to this group; I think we have a terrific group here, and I am so grateful that we're able to discuss mature, somewhat painful, subjects in context of our readings. I believe written works are more meaningful when one can relate to them, and it is comforting to know that I'm not the only person who can.

If you'll look at the three poems we've chosen so far, I think it tells something interesting about our group. Each of us has chosen a poem that contains some very deep meaning. We've all chosen "the stuff that makes ya *think*."

One of the other peers replied, "I also, agree that we have a great group!! This group has really motivated me to re-read and contemplate the material so that I can contribute to this insightful group. Good point about 'survivors guilt.' I find myself seeing things I hadn't seen before with every post I read!"

I found the responses to the prompts at the bottom of the survey very re-affirming. To the question about whether the interactivity tools helped dispel anxiety about the course, the combined percentages for all groups was a resounding 92% yes, 8% no. To the question about whether the interactivity tools helped develop a sense of community and dispel student isolation, the combined percentages for all groups was 85% yes, 15% no. While the preferences over the specific tools varied, the stats indicate to me that any time I invest in taming my student's feeling of isolation and level of anxiety pays off in fostering a positive learning community

One of faculty and administrators' most serious concerns about web-based instruction centers on course completion, marred by a high rate of attrition. Sarah Carr laments in "As Distance Education Comes of Age, the Challenge is Keeping the Students," "we have little national statistical support, but anecdotal evidence clearly points to lower course-completion and retention rates among distance learning formats over the traditional counterparts." She goes on to put numbers with the generalizations, reporting that some administrators "concur that course-completion rates are often 10 to 20 percentage points higher in traditional courses than in distance offerings" (Carr). Writing for *Syllabus Magazine,* Judy Baker adds that "Innovative approaches to providing instructor-student interactivity are key to decreasing online attrition rates" (26). However, she does caution us about the increased cost in terms of faculty time and suggests "small groups for the purpose of coordinating [student] communication with the instructor and each other" (27). My own experience concurs with both authors.

How have attrition rates been affected by increasing interactivity? In the web-assisted composition course, retention has improved. For fall 2001, the retention percentage was 83%, higher than the 78% rate from fall 2000 (also web-assisted), and certainly beyond the 62% rate for two traditional sections from fall 1999. Turning to the web-based literature course, the first semester of increased interactivity, summer 2001, yielded a very promising 85% rate; however, fall 2001 plummeted to a disappointing 63%. While there were extenuating, non-academic circumstances for the majority of the students that dropped, the statistic is still shocking, particularly when compared to the 78% retention rate of spring 2000, 80% of summer 2000, 76% of fall 2000, and 68% of spring 2001. Despite the one semester's weak showing, I am prone to agree with Carr's reporting that faculty opinions suggest that improved retention can be achieved by "more fully utilizing the Internet." She shares an Academic and Administrative Technology Dean's comments, concluding that "when he switched to a more interactive Internet program that allowed him to hold regular chats and organize e-mail messages more efficiently, his course-completion rates jumped from 62 percent to 90 percent" (Carr). I'm happy to report that the retention rate for the current semester, spring 2002, is back up to 83% with one month left in the semester.

A third area of interest is student outcomes—our traditional, though not always reliable indicator of student learning. Karen Frankola suggests that following best practices in interactivity "not only creates a sense of community for participants; it also stimulates learning through discussing ideas and practicing skills . . . . [students] benefit from high interactivity with faculty and each other through exchanges like bulletin board discussions and e-mails" (16). Anytime we increase and deepen the rate of idea exchange, we move our students to improved material analysis and integration. This should be the goal of our courses based on sound educational principles.

Student end-of-course outcomes for the web-assisted composition class show an average GPA of 2.0. This GPA is in line with the 2.0 from fall 2000 (also web-assisted) but higher than the 1.81 and 1.56 from two traditional sections in fall 1999. Turning to the web-based introduction to literature course, once again, summer 2001 stands out, with a combined, average GPA of 2.72 for the two sections. Fall 2001 also has a strong showing at 2.73, but this positive result is tempered when the low retention rate is taken into account—some poor performers weeded themselves out before their GPA's could become part of the statistics. Both semesters' results offer a nice contrast to spring 2000 at 2.24, summer 2000 at 1.94, fall 2000 at 2.06, and spring 2001 at 2.66. Strong end-of-semester outcomes could become the norm.

So in response to the question, "What are we to do to combat potential problems for students in courses using the web?" We should answer, "Increase interactivity." This solution is widely available for students in web-assisted courses as opposed their counterparts in standard traditional courses and for students in web-based courses as opposed to their counterparts in other distance education formats. In both cases, building learning communities through more opportunities for faculty-student, student-student, and student-course content interaction is easily achievable.

Interactivity is the standard for effective online instruction. As we continue to invest our time redefining and refining interactive opportunities for our students, we should take heart in an interesting finding reported by the NEA in their 2000 faculty survey. They conclude that "Faculty teaching courses with more student interaction are also more likely than their counterparts with less student interaction to hold an overall more positive attitude toward their distance course . . . [They also give] their distance learning course higher ratings on meeting the goals NEA has determined are essential to a quality education" (National, "Survey" 6). It seems clear that the positive effects of integrating interactivity do not flow in only one direction.

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Developmental Pathways and Technology: The Foundation of Enhanced Intellectual

By: Gail Slye, Edward Williamson

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

The combination of technology applications and an understanding of developmental pathways theory enhances intellectual growth for pre-service teachers. Utilizing the theories developed by Dr. James Comer and integrating them with state of the art technological applications, this paper describes one model of pre-service education that has been remarkably successful in bridging the gap between synchronous and asynchronous instruction. The developmental pathways are divided into the following areas: physical, cognitive, psychological, social, ethical, and language. The authors currently use the ERes system to help deliver their education courses. Examples of technological applications for each pathway are presented and discussed.

PROCEEDING

Schools are dynamically and continuously changing systems (Comer, 1993) serving students who are currently facing crisis-level issues ranging from academic achievement to psychosocial development. The Comer School Development Program is identified as a school reform project that focuses on both academic performance and behavior modification (Cook, Hunt, & Murphy, 1998). Significant results in the areas of school climate, classroom climate, academic achievement, school adjustment, and self-concept have been attributed to the Comer School Development Program (Comer & Emmons, in press). Dr. James Comer utilizes "a metaphor of six developmental pathways to characterize the lines along which children mature – physical, cognitive, psychological, language, social, and ethical" (Comer, Ben-Avie, Haynes, & Joyner, 1999, p. 3). The developmental pathways require a review of "the central core of teaching and learning, which is usually defined as curriculum and instruction (which has now been) expanded to include child development and relationships" (Gillette, 1995, p. 75). Teaching and learning must use child development as an educational foundation and relationships as the "vehicle for learning" (Gillette, 1995, p. 81) to provide an effective schooling experience. The complexity of the developing children requires that educators view them in a holistic manner. The developmental pathways act as "a thread that makes sense by looking at its place in the whole tapestry" (Gillette, 1995, p. 79).

When the developmental pathways are combined with the current rise in technological pedagogy a new educational paradigm is manifested. What part do the developmental pathways play in the utilization of current technological trends and pedagogical practices? How can the intellectual potential for excellence be harnessed by recognizing and addressing the synergistic relationships existing between technology and the developmental pathways? This paper seeks to answer this question by focusing on the utilization of the developmental pathways in an educational foundations course taught by the authors at Drury University.

The Developmental Pathways

The Social Pathway

The social development of students is enhanced by healthy interpersonal relationships in a wide variety of social settings. Learning is a social enterprise and can be enhanced when students have the opportunity to work collaboratively on complex, structured group activities. Social development also implies the gaining of skills and expertise to be comfortable in varied social contexts (Comer, 1999).

The Ethical Pathway

The ethical development of students involves the ability to reason and make conscious decisions to behave in certain ways. Children develop ethically in the transition from distinguishing between desirable and undesirable behaviors to possessing the ability to understand ethical principles and using these principles to regulate their own actions (Comer, 1999). Other research has been conducted on this phase of development by Kohlberg (1984) and Gilligan (1982).

The Physical Pathway

The physical development of students refers to the biological maturation of the child. It involves more than the obvious manifestations of size, shape, and physical characteristics. It also includes hand-eye coordination, dexterity, visual acuity, and auditory perception (Comer, 1999).

The Cognitive Pathway

The cognitive developmental pathway involves the capacity to think, plan, solve problems, and accomplish goals (Comer, 1999). Within this developmental pathway the child's ability to think and to use his or her mind to handle challenges is addressed. The cognitive component emphasizes flexibility of thought, the aptitude to manipulate information, and the skill to manipulate the environment (School Development Program, 2001).

The Language Pathway

The language developmental pathway builds the capacity for receptive and expressive language in a variety of contexts (Comer, 1999). Cognitive development is mediated through language. This pathway involves the ability to receive and express oneself through both spoken and written language (School Development Program, 2001).

The Psychological Pathway

The psychological developmental pathway involves self-confidence, self-esteem, and the ability to gain control over individual feelings, and to accept oneself (Comer, 1999). Increasing the capacity for acceptance and confidence in oneself during the ongoing process of identity formation is the focus of the psychological pathway (School Development Program, 2001).

The Developmental Pathways and Technology

Technology has the potential to alter how students learn, how teachers facilitate learning, how students demonstrate knowledge acquisition, and how individuals interact within the learning environment. Technology is a powerful tool that is capable of consistent independent practice, able to personalize the assessment process, and a way to manipulate information in order to reach a higher level of understanding.

Technology is not a substitute for any of the following: the acquisition of skills, knowledge, and cognition; a replacement for the mastery of basic skills; nor should the curriculum focus only on learning technology. Teachers learn to integrate technology and emphasize critical thinking and problem-solving skills in their instruction (Branigan, 2002). A recent analysis of student test scores provides substantial evidence to indicate that the utilization of technology to facilitate an inquiry-based approach to learning can increase student achievement (Branigan, 2002).

The Ethical Pathway and Technology

Roblyer and Edwards (2000) stated that technology users represent society in a microcosm. Carpenter (as cited in Roblyer and Edwards, 2000) defined three major kinds of ethical and legal issues common to technology: copyright infringement, illegal access, and online ethics. Software piracy is a common example of copyright infringement. Hacking is the general term used for illegal access. Online ethics is a recent development due primarily to the proliferation of inappropriate websites.

In recent years objectionable material, Internet predators, viruses, copyright violations, and proper Internet behavior have become important issues. Schools can install firewalls and filtering software to eliminate the majority of objectionable material. Students should be instructed to never provide personal information to anyone they contact through the Internet. Schools should never give names of students on web pages.

Examples of good Internet behavior have been compiled by Kosma (cited in Roblyer and Edwards 2000) and include the following: personal identification, include a subject line, avoid sarcasm, respect the privacy of others, acknowledge and return messages promptly, copy with caution, don't send junk mail (spam), be concise, and use appropriate language (available at www.pass.wayne.edu/~twk/netiquette.html).

Barbour (cited in Raskind and Higgins, 1995) contended that there are three fundamental views of technology: technology as a liberator; technology as a threat; and technology as an instrument of power. These three views can be roughly characterized as optimistic, pessimistic, and contextual, respectively.

Implications for Intellectual Excellence

In the EDUC 200 (Technology in the Classroom) course at Drury University students are given instruction in the ethical uses of computers and allied technologies. Each student is required to sign up for a Drury University e-mail account. Part of the sign-up process is that students must read and sign a policy and ethics statement. In any Drury University course, students are expected to abide by the academic honesty and integrity clause in the university catalog.

Another assignment that highlights the role of ethics in the EDUC 200 course is the development of a prototype Internet usage agreement to include the benefits of technology in the classroom, standards for acceptable usage, and sanctions for unacceptable usage. Most of the students who take this course are in the process of earning teacher certification. It is hoped that when these students are hired by local school districts they will be able to implement appropriate Internet usage agreements with their students. Many school districts already have such agreements in place. In order to develop their prototype the EDUC 200 students conduct Internet research to find and evaluate existing agreements.

The Social Pathway and Technology

Roblyer and Edwards (2000) note that spending too much time on computers, especially to deliver online courses is considered harmful to the development of relationships and social skills by children.

Grabe and Grabe (2000) accurately state that learning is a social phenomenon. The social context of learning includes teachers, students, and communities (including virtual ones) beyond the school. They describe three major concepts of the social context of learning: cognitive apprenticeships, cooperative learning, and learning communities.

Cognitive apprenticeships in the Vygotskyan tradition place the learner in the role of an apprentice to a more expert practitioner, either the teacher or an outside authority. Reciprocal teaching is one manifestation of a cognitive apprenticeship. Group Internet projects are an excellent way to provide for interactions between the teacher and the student.

Cooperative learning requires students to work together to accomplish a learning task. Goals are accomplished through motivating, teaching, evaluating, or engaging the others in the group. An effective cooperative learning group can encourage active learning. The Internet provides new options for cooperative learning. The opportunities for communication, inquiry, or construction ensure a good starting point for cooperative learning groups.

Learning communities are social organizations created by people who share common goals, values, and practices. The Internet affords the opportunity to create virtual learning communities. While these are advantageous in many respects, Grabe and Grabe (2000) caution that these virtual learning communities should never take the place of face-to-face interaction. Distance or distributed learning is another manifestation of learning communities made possible by the rise of the Internet.

Jonassen (2000) advocated the use of asynchronous conferencing as a mind tool to facilitate learning. Asynchronous conferencing can be accomplished through the use of online chat rooms and bulletin board services. Roueche and Roueche (2002) in discussing on-line chat rooms maintained that such avenues lose a valuable dimension because of the lack of energy generated by sheer physical presence.

Kraut, et al. (1998) provided evidence that researchers are divided over the social implications of technology. Some believe that people become cut off and socially isolated by using technology for communication while others believe the Internet causes better and stronger relationships because isolation and geographical restraints have been overcome. The authors point out that strong personal relationships are generally supported by close physical proximity. Most of the relationships maintained via technology are weak. Their research discovered that the Internet causes a decline in social involvement because it displaces social activity and strong ties.

Implications for Intellectual Excellence

In the EDUC 200 (Technology in the Classroom) course at Drury University students have multiple opportunities to incorporate the social pathway into their learning process. One of the primary ways this is accomplished is through the required field experience. Each student is required to schedule four hours of observation in a local school district to see technology usage in the school environment. This assignment requires students to interact with both public school teachers and students.

Students work together on several assignments in the EDUC 200 class. They work in teams to evaluate educational software and they share the results of their final projects with others in the class. The final project incorporates all facets of the course material (internet use, Power Point, and Microsoft Word applications) into a single comprehensive project. Through the use of the presentation equipment available in the computer lab, the students are able to present two Power Point presentations through the course of the semester. One presentation is an autobiograpnical review of their life; the other consists of using Power Point to teach a lesson they have created.

The use of in-class discussions is prominent to disseminate the information required to complete the course requirements. Students also have the opportunity to present two current event presentations dealing with technology and the learning process. These current event presentations generate a considerable amount of discussion among the students.

The ERes course page allows for student interaction even when the class is not in session. By posting messages on the class discussion board students can obtain help for a difficult assignment or simply interact with one another in an asynchronous environment. The students' work is also posted to their folder on the ERes page creating a virtual portfolio that they can share with others.

In the EDUC 200 course there is a wide divergence of skill levels. One of the best features of the social pathway is the ability for one student to help another. Collaboration and scaffolding are encouraged.

The Physical Pathway and Technology

Issues inherent in a discussion of the physical pathway and technology revolve around two points: first, the need for adaptive technology to allow disabled students the opportunities to use technology and second, the prevention of health related problems such as carpal tunnel syndrome due to the use of technology.

Roblyer and Edwards (2000) emphasize the importance of federal legislation, in particular The Education for All Handicapped Children Act of 1975 and The Individuals with Disabilities Act of 1990 in providing equal and adequate access to technology for students with disabilities. They contend that technology systems can allow people to communicate and move around on their own giving them a level of freedom and self-determination. However, they also report on problems due to cost and appropriateness and maintain that technology cannot cure handicapping conditions. Technology should be viewed as an aid rather than a cure.

Implications for Intellectual Excellence

Schools must provide adequate training to students to insure that they do not develop health problems related to technology. Since physical development encompasses both outward physical attributes and unseen attributes such as visual acuity and hand-eye coordination, as well as dexterity, the EDUC 200 course is geared to the development of computer skills such as the integration of visual and auditory stimuli into presentations, the enhancement of fine motor skills (mouse handling), and an appreciation for the problems encountered by physically disabled students.

Each of the course requirements for EDUC 200 requires the use of one or more of the unseen physical attributes: visual acuity, dexterity, hand-eye coordination, or auditory perception. The Cognitive Pathway and Technology

Technology can support the cognitive pathway as a tool to access, organize, and interpret information. The Internet and encyclopedic-software programs can allow students to have immediate access to current research and information. Computer software that provides word processing programs, spreadsheet capabilities, and electronic presentation formats can help students synthesize the collected information and disseminate the material through an effective mode of communication. The following types of technology can provide support for the cognitive pathway:

- CAI/Drill/Practice/Tutorial
- Computer Projector
- Simulation/Educational Games
- Web Page Development
- Electronic Chalkboard
- Electronic Library Access

Implications for Intellectual Excellence

In the EDUC 200 course at Drury University, all of the assignments are specifically geared toward the cognitive pathway. Through the processes of accessing, organizing, and interpreting information students are presented with numerous opportunities in multiple contexts for cognitive pathway development.

The Language Pathway and Technology

According to research studies there is a robust relation between learning stimulation and language competence and learning stimulation is associated with the size of an individual's vocabulary (Bradley, Corwyn, Burchinal, McAdoo, & Coll, 2001). Language enhancement activities can be supported by technology in the following manner:

- E-mail
- Word Processing
- Internet Web Sites
- Videos
- Software Programs
- Video Camcorder/Digital Camcorder

Implications for Intellectual Excellence

In the EDUC 200 course the language pathway is developed through the sharing of student projects. From the simple use of email communications to standing in front of the class to present a current event students are continuously provided with opportunities to develop the language pathway.

Students are required to give three Power Point presentations to their classmates, one is an autobiographical representation of their life, another is using Power Point to teach a lesson, and the third is the Final Project where students utilize the Internet to develop a thematic scavenger hunt and then prepare a Power Point presentation to introduce the theme.

The Psychological Pathway and Technology

Managing personal emotions in socially accepted ways is an essential personal skill. What people do with their emotions is important. Is it possible that students behave the way they feel? And if they are behaving badly, is that because they are feeling badly? Technology can be used to address the psychological pathway by:

- Electronic journals
- Electronic calendars
- Scanner
- Authoring or Multimedia
- Computerized Testing
- Electronic Student Portfolio
- Authoring/Multimedia
- Desktop Publishing
- Open Lab Access
- Individual Computers
- Teleconferencing
- Interactive Video
- Educational Television

Implications for Intellectual Excellence

In the EDUC 200 course the psychological pathway is developed through student interactions and cooperation. The best example of the use of the psychological pathway is demonstrated in the final project. In this project students select a theme (e.g. baseball or frogs), they then conduct Internet searches to identify web pages that deal with that theme, then the students construct a learning activity based upon information or activities found on those web pages. The students then create a Power Point presentation to stimulate interest in their theme. The culminating activity for the course involves students exchanging their final projects and trying them out.

Summary

Researchers have reached a consensus that there is a dynamic interplay between individuals and their environments (Bradley, et al, 2001). Dr. James Comer has provided a comprehensive framework for understanding the complexity of not only children, but of all human beings. In the EDUC 200 course at Drury University the theoretical implications of Dr. Comer's work are being put to the test. Our students demonstrate the enhanced intellectual excellence that the developmental pathways can provide.

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Seventh Annual
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April 7-9, 2002

Does Personality Type Effect Online Versus In-Class Course Satisfaction?

By: Richard Daughenbaugh, David Ensminger, Lynda Frederick, Daniel Surry

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Lecture/Presentation :: Level: All

ABSTRACT

This study sought to determine if different personality types express more or less satisfaction with courses delivered online versus those delivered in the classroom. The methodology employed two online surveys - the Keirsey Temperament Sorter (KTS) and a course satisfaction instrument. The four hypotheses are that Introvert, Intuition, Thinking and Perceiving personalities express greater satisfaction with online courses than Extrovert, Sensing, Feeling, and Judging personalities. Both descriptive and inferential statistics were used in the study.

INTRODUCTION

The study described in this paper sought to determine if different personality types express more or less satisfaction with courses delivered online versus those delivered in the classroom.

The Keirsey Temperament Sorter (KTS) is a popular instrument for the investigation of personality variables. The KTS asks the respondent to provide preferences to 70 questions. Based on responses to the 70 questions, the respondent is rated on four variables. These four variables are 1) Extroversion or Introversion (E or I), 2) Intuition or Sensing (N or S), Thinking or Feeling (T or F), and Judging or Perception (J or P). Because there are 2 possibilities for each of the four variables, there are 16 possible results on the KTS. These are: ESTJ, ISTJ, ESFJ, ISFJ, ESTP, ISTP, ESFP, ISFP, ENFJ, INFJ, ENFP, INFP, ENTJ, INTJ, ENTP, and INTP. Each of these 16 temperament groups has their own unique set of personality traits. Additional information about the KTS and the different temperaments can be found at the Keirsey Temperament Sorter and

Keirsey Temperament Theory web page:http://www.keirsey.com/

There have been a number of published studies using the Myers-Briggs Temperament Indicator (MBTI) as a research instrument in a wide variety of fields. The MBTI is similar to the Keirsey Temperament Sorter (KTS) used in this study. Examples of the MBTI as a research instrument include Culp and Smith's (2001) study of how personality type affects team performance on engineering projects, Jarlstrom's (2000) research into career expectations of Finnish students, and Harris and Kumra's (2000) research into cross-cultural training for managers. Bozeman (1978) used the MBTI to study the implementation of a computer-based information system. Ballou and Brown (1987) used the Keirsey test to study burnout among college dorm assistants. Morris (2000) used the Keirsey test to study the personality traits of applicants to dental school.

The MBTI and KTS have also been used as research instruments in a number of studies related to education. Barrett (1991) compared effective teaching behaviors with teachers' personality types. Dewar and Whittington (2000) studied how students used their personality type to develop coping strategies for learning in an online environment. Cooper and Miller (1991) used the MBTI to study the relationship between personality and course performance among college business students. Cano (1999) used the MBTI to compare personality type and academic performance by college students while Borg and Shapiro (1996) used it to study achievement in an economics course. Numerous other studies (e.g., Rollins, 1990; Schroeder, 1993; Carnell & Monroe, 1993; Felder, 1993; Fish & McKeen, 1995; and Ehrman & Oxford, 1990) have used either the Myers-Briggs test or the Keirsey test to study the relationship between personality and achievement in a variety of educational settings.

The literature reviewed for this study suggests that there is a relationship between personality type and course success. While the review didn't reveal evidence of a direct link between personality type and online or in-class course preference, we believe such a relationship exists. Based on the literature review, we began this study with the following four hypotheses:

- Students with predominately Introvert personalities will express greater preference for online courses than students with predominately Extrovert personalities
- Students with predominately Intuition personalities will express greater preference for online courses than students with predominately Sensing personalities
- Students with predominately Thinking personalities will express greater preference for online courses than students with predominately Feeling personalities
- Students with predominately Perceiving personalities will express greater preference for online courses than students with predominately Judging personalities

This study is important for three reasons. First, as colleges make increased use of online courses, it will be useful to know which personality types express greater satisfaction with online courses. Students from personality groups with low satisfaction levels may wish to avoid online courses or may require special attention. Second, instructors will be able to use this information to identify and modify areas of online courses that have low satisfaction ratings for different personality groups. Third, this study will serve as the basis for other research by the authors into the area of satisfaction with online courses.

In this paper, we will describe the methodology used in the study, provide an overview of the main results, discuss the main results in detail using both descriptive and inferential statistics, and describe the future directions of our research.

METHODOLOGY

This section describes the methodology used in the study. The section includes a discussion of participants, questionnaires, procedures, and data analysis.

PARTICIPANTS

The participants in this study were 146 college students taking online and in-class courses in the College of Education. Both graduate and undergraduate students were included. One hundred fourteen (78.1%) of the subjects were female while 31 (21.2%) were male. Sixty-eight (46.6%) were undergraduate students while 78 (53.4%) were graduate students. Twenty-seven (18.5%) of the students were enrolled in online courses while 119 (81.5%) were enrolled in an in-class course.

QUESTIONNARIES

The methodology for this study employed two online questionnaires. The first questionnaire was a free, web-based version of the Keirsey Temperament Sorter (KTS). All students were asked to take the KTS and to remember the four-letter temperament code that placed them in one of the 16 categories.

The second survey was a course satisfaction instrument that we developed. The course satisfaction instrument measured students' satisfaction with aspects of the course such as interaction, feedback, amount of information, and assessment procedures. The course satisfaction instrument was accessed by the respondents via the World Wide Web. Responses to the form were sent to us via anonymous email. We used a free web-based form processing service to provide for the anonymous email.

PROCEDURE AND DATA ANALYSIS

Results of the Keirsey Temperament Sorter and responses to the course satisfaction instrument were analyzed to determine if there were any correlations between personality type and course preference. A variety of descriptive and inferential statistics were used to analyze the data. Frequency counts, graphs, and mean, mode, and median were the descriptive methods used. Correlation and analysis of variance were the inferential statistics used.

RESULTS AND DISCUSSION

In this section, we will present the major results of this study and discuss each of them briefly. We will also include a discussion of the limitations of the study. We conclude with a brief description of future research topics that arose from this study.

Description of Temperament Variable Groups

Extrovert (E) / Introvert (I) Variable

In this study, 82 subjects (56.2%) fell into the Extrovert category, 48 subjects (33.8%) fell into the Introvert category and 12 subjects (8.5%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 1).

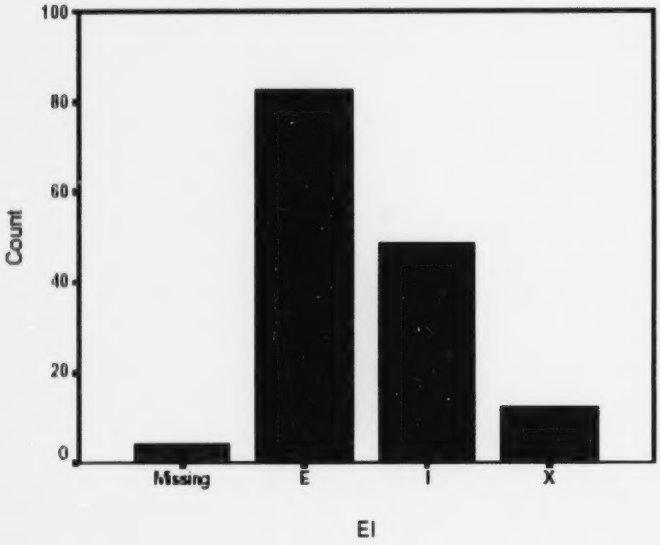

Figure 1. Bar Graph Showing the Distribution of Subjects within the Extrovert (E) / Introvert (I) Variable

Intuition (N) or Sensing (S) Variable

In this study, 46 subjects (31.5%) fell into the Intuition category, 83 subjects (56.8%) fell into the Sensing category and 14 subjects (9.6%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 2).

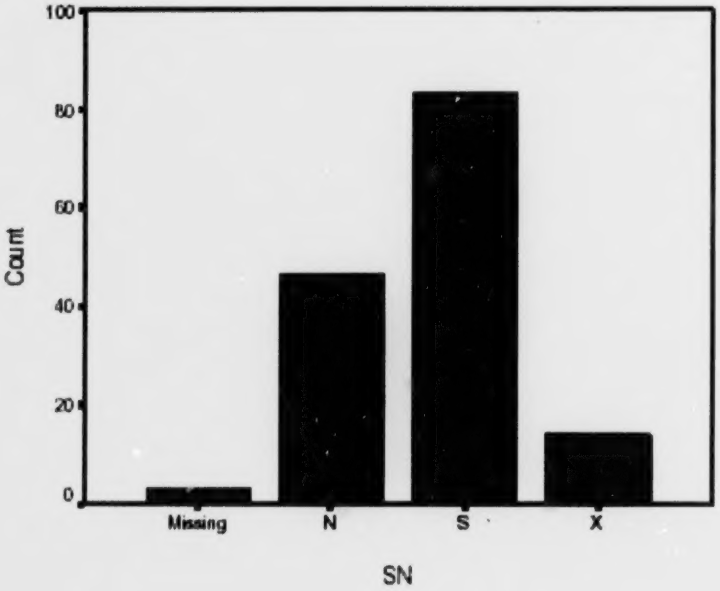

Figure 2. Bar Graph Showing the Distribution of Subjects within the Intuition (N) or Sensing (S) Variable

Thinking (T) or Feeling (F) Variable

In this study, 85 subjects (58.2%) fell into the Feeling category, 49 subjects (33.6%) fell into the Thinking category and 10 subjects (6.8%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 3).

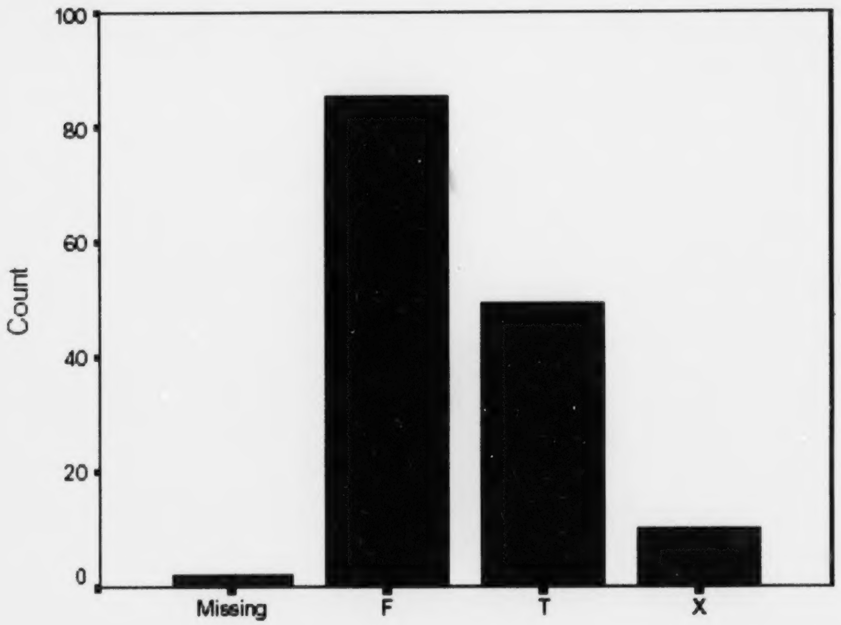

Figure 2. Bar Graph Showing the Distribution of Subjects within the Thinking (T) or Feeling (F) Variable

Judging (J) or Perception (P) Variable
In this study, 122 subjects (83.6%) fell into the Judging category, 19 subjects (13.0%) fell into the Perception category and 3 subjects (2.1%) fell into the "X" category – representing those whose responses could not be categorized (see Figure 4).

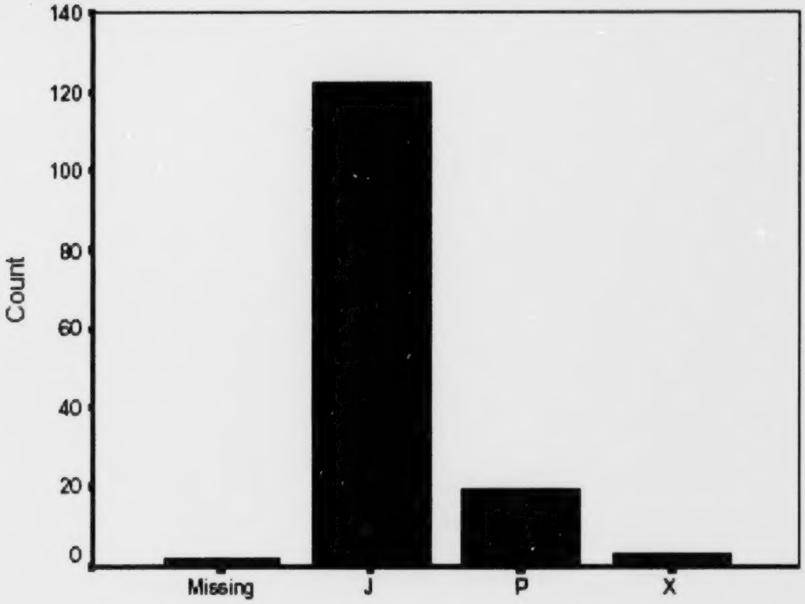

Figure 4. Bar Graph Showing the Distribution of Subjects within the Judging (J) or Perception (P) Variable

Overall Preference for Online versus In-class Courses

In order to test our four hypotheses, we compared the mean of responses related to online or in-class course preference for each of the four pairs of temperament variables. A one-way analysis of variance was used to compare the mean. Results of this analysis are shown in Table 1.

	Sum of Squares	df	Mean Square	F	Sig.
EI					
Between Groups	2.605	2	1.302	3.173	.045
Within Groups	56.643	138	.410		
Total	59.248	140			
SN					
Between Groups	.164	2	.082	.216	.806
Within Groups	52.625	139	.379		
Total	52.789	141			
TF					
Between Groups	.609	2	.305	.775	.463

Within Groups	55.055	140	.393		
Total	55.664	142			
PJ					
Between Groups	.465	2	.232	1.243	.292
Within Groups	26.165	140	.187		
Total	26.629	142			

Table 1. Overall Preference for Online versus In-class Courses for Each of the Four Pairs of Temperament Variables

As shown in Table 1, only one of the four temperament variables demonstrated statistically significant differences in their preference for online or in-class courses. There was a statistically significant different in the online versus in-class course preference for the Introvert/Extrovert variable. The Extrovert group had a mean response of 1.96 while the Introvert group had a mean response of 2.28. A lower mean represents a stronger preference for online courses. Descriptive statistics for the Extrovert / Introvert group on this question are shown in Table 2.

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
E	82	**1.96**	.618	.068	1.83	2.10
I	47	**2.28**	.540	.079	2.12	2.44
X	12	**2.17**	.577	.167	1.80	2.53
Total	141	2.09	.603	.051	1.98	2.19

Table 2. Descriptive Data for Online versus In-class Courses for Temperament Variable Introvert or Extrovert.

We used items on the course satisfaction survey to compare the Extrovert group and the Introvert group on ten different course satisfaction factors. Course satisfaction factors included interaction with the instructor, interaction with other students, and amount of information presented in the course. We found two statistically significant differences between the Extroverts and the Introverts among the 10 course satisfaction factors. The two groups differed on the their satisfaction in the way they were evaluated and in their preference for the way information was presented in their courses. Unfortunately, since some of the subjects were in online courses and some were in-class courses, it's impossible to draw any conclusions about this result other than it provides general support to the theory that Extroverts and Introverts differ in their learning style preferences.

We also compared the other three temperament groups on each of the 10 course satisfaction factors. We found the following results:

1) There was a statistically significant difference between the preferences of the Intuition (N) group and those of the Sensing (S) group for the type of information presented in the course. The Intuition group expressed stronger preferences in the type of information presented than the Sensing group

2) There were no statistically significant differences found between the Thinking (T) group and the Feeling (F) group on any of the ten factors tested.

3) There was a statistically significant difference between the preferences of the Judging (J) group and those of the Perception (P) group for the amount of student interaction in the course. The Perception group expressed stronger preferences for the amount of student interaction than the Judging group.

While these finding are interesting, we have to avoid placing too much importance on them. As with the Extrovert / Introvert variable, some of the subjects were in online courses and some were in-class courses. As a result, it's impossible to draw any conclusions about these results other than they provide general support to the theory that differences exist in their learning style preferences of the various temperament groups.

We also compared the responses of students who were taking online courses and students who were taking in-class courses on each of the 10 course satisfaction factors. One statistically significant result was found. Online students and in-class students differed in their satisfaction with the amount of interaction with other students. Students in the in-class courses expressed much stronger satisfaction with student interaction than did students who were in the online courses.

Finally, we compared preference for online versus in-class courses by gender. The analysis showed that there was no statistically significant difference in the preferences for online or in-class courses by gender. The mean preference response for females (2.1) and for males (2.0) in this study were virtually identical.

Limitations of the Study

There were three major limitations of this study. First, there were not an equal number of online and in-class subjects in this study. Eighty-two percent of the subjects in this study were from in-class courses. Second, subjects in this study were from different courses. Ideally, subjects should come from online and in-class sections of the same course – preferably taught by the same instructor. Third, both undergraduate and graduate students were included in this study. Future studies should include only graduate or undergraduate students.

Areas of Future Research

The results of this study suggest several questions that might be examined by future research. Future research in this area should concentrate on defining specific variables in online instruction. We found that the generic construct of "preference" for online or in-class courses was too vague. Future researchers should look at specific aspects of online courses such as feedback from the instructor, interaction with other students, and assignment workload.

There have been very few on-going, longitudinal studies related to this area. The literature would benefit from a large-scale, long-term study that investigated the relationship between temperament variables and learning in an online environment.

CONCLUSION

In this section we will discuss our finding in relation to each of the four hypotheses we developed at the beginning of our study. We will also discuss other main findings of the study that don't relate directly to the hypotheses.

Hypotheses

Hypothesis One

Students with predominately Introvert personalities will express greater preference for online courses than students with predominately Extrovert personalities

This study resulted in a statistically significant difference between the preference for online courses between Introvert personalities and Extrovert personalities. However, the findings of this study were exactly opposite of what we had hypothesized. Extroverts in our sample expressed stronger preference for online courses than did Introverts. This is an interesting and counter intuitive finding. More research is needed to determine if this finding was unique to this study or if it can be generalized to a wider population.

Hypothesis Two

Students with predominately Intuition personalities will express greater preference for online courses than students with predominately Sensing personalities

The results of this study suggest no statistically significant difference in the preference for online courses between students with predominately Intuition personalities and those with predominately Sensing personalities.

Hypothesis Three

Students with predominately Thinking personalities will express greater preference for online courses than students with predominately Feeling personalities

The results of this study suggest no statistically significant difference in the preference for online courses between students with predominately Thinking personalities and those with predominately Feeling personalities.

Hypothesis Four

Students with predominately Perceiving personalities will express greater preference for online courses than students with predominately Judging personalities

The results of this study suggest no statistically significant difference in the preference for online courses between students with predominately Perceiving personalities and those with predominately Judging personalities.

Other Main Findings of the Study
There were six other main findings of this study.

1) There were statistically significant differences in the responses to certain course satisfaction variables among those in the Extrovert / Introvert temperament group.

2) There were statistically significant differences in the responses to certain course satisfaction variables among those in the Intuition / Sensing temperament group.

3) There were no statistically significant differences in the responses to any course satisfaction variables among those in the Thinking / Feeling temperament group.

4) There were statistically significant differences in the responses to certain course satisfaction variables among those in the Perceiving / Judging temperament group.

5) There was a statistically significant difference in satisfaction with student interaction between students taking online courses and those taking in-class courses. Students taking in-class courses had greater satisfaction with their level of student interaction than students in online courses.

6) There was no statistically significant difference related to gender in the preference for online or in-class courses. Females and males in this study expressed nearly identical levels of preference for online or in-class course.

Recommendations

Based on the findings of this study, we have developed three recommendations. First, instructors teaching online courses should consider the personality types of students in their courses. Instructors should, at a minimum, be aware that different personality types are present in their courses and try to account for those personality types.

Our second recommendation is that online instructors should provide a variety of ways for students to interact with each other in their courses. Methods for increasing student interaction could include group projects or assignment, "students only" discussion areas, communication via electronic mail or telephone, and face-to-face interactions when possible.

Our third recommendation is that more research be done in this area. Our study provided enough evidence to suggest that temperament variables play an important role in course preference. More research in this area could lead to a greater understanding of why certain students prefer online or in-class courses. The ultimate goal of such research would be to create online learning environments that are effective learning tools for all students.

Authors' Notes:

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Seventh Annual
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Elementary Algebra + Student-Written Web Illustrations = Math Mastery

By: Bette Veteto

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Lecture/Presentation :: Level: Beginner

Proceeding

ABSTRACT

This project focuses on how to construct and use a student-made elementary algebra tutorial web page, how this helps students further explore the topics studied in elementary algebra, and how students can publish their work on the class web page for use by other students. Practical, understandable student web illustrations and the technology skills necessary to carry out the project are presented and explained.

Introduction

The value of using web technology to supplement instruction or to deliver instruction is becoming apparent. Teachers and students can produce learning materials and publish them on the web for their own use and for the use of other students. The asynchronous aspect of this method of delivering tutorial services is a very valuable option to offer students. The author's university is encouraging teachers and students to become involved in delivering or supplementing their teaching and learning with technology. Grants are awarded each spring to deserving projects. This project was funded by a small technology grant awarded by the university. After considering ways to use technology to improve teaching and learning, the author decided to plan a project in which one section of her elementary algebra students would construct a tutorial web page covering selected topics in the course.

Rationale for Constructing an Elementary Algebra Tutorial Web Page

The second National Council of Teachers of Mathematics standard says that students need to "be able to reflect upon and to clarify their thinking about mathematical ideas and relationships, and to express mathematical ideas in writing" (Curriculum and Evaluation Standards for School Mathematics, 1989, p. 140). By incorporating reading, writing, and active learning projects into regular algebra course work, students can process the math topics studied in more depth and can connect topics to specific applications. This holistic approach to studying mathematics, computation, application, illustration, reading, and writing, will offer several approaches to mastering the content of the course which will honor the diversity of student learning styles. Most of the students in this course are freshmen, and adding an active learning, technology component might impact positively how they view math and give them a more positive attitude toward subsequent math courses and toward the benefits of using technology.

Also, the *1990 Harvard Assessment Survey on the Effectiveness of Teaching* suggested several effective college teaching methods. One of the methods was active learning in small groups inside or outside of class which produced higher grade averages, more student involvement, more depth of understanding, and more enjoyment in the learning process. This web project gets them involved in small-group active learning projects which they publish to the class web page. This group work combined with the technology component will produce students who better understand math and who can navigate the World Wide Web and who can publish their work on the Web. Groups can communicate in class, out of class, and by email. The project promotes close teacher-student interaction as each group comes to the teacher's office for help in publishing their work to the class web page.

Project Description

In the summer before the project began, the teacher constructed a web page in Netscape Composer which contained an outline of each topic studied in the 0820 elementary algebra course arranged by chapter. The web address of this page is http://www.memphis.edu/~brveteto/grant.htm. This became the skeleton of the class web page to which the students would link their work. During this same summer period, the teacher planned 5 projects for 5 groups for a total of 25 topics for which the student groups would construct short explanatory web pages as links. The teacher also made sure that she had the requisite software on her office computer—Composer, PowerPoint, MSWord. An Internet connection is also an assumed component. A scanner was purchased with grant money, and a departmental digital camera was available for use. Practice using all these components was carried out in this summer term, since the project required that the teacher show groups of students how to use them.

Student Group Work

Elementary Algebra section 003 was chosen for this project, since it had a manageable enrollment, 27 students. It was mentioned on the first day of class as the syilabus was discussed that there was an Internet component to the class. This was done to allow students time to switch sections if they chose. Each student was given an assignment to go to the computer lab and get a username and password. A lab attendant would help them if they didn't know how to do it.

During the second week of school, the project was explained in detail during class time. A color print out of the class web page was shown, the group project assignment sheet was distributed to each person, and group assignments were made by the teacher. During the next class period, a 20-minute group time was allotted, and each group planned its first project (all from Chapter 1 which we were studying). The teacher gave suggestions and help as needed. Also, the teacher helped the group which had the active learning project which required that a picture of the group be taken—figure slope of handicap ramp, estimate height of tree using similar right triangles, take Celsius and Fahrenheit temperatures and plug into conversion formulas. Each group made an appointment with the teacher for the next week to place their work onto the web page. This procedure was repeated five times for each of the five chapters in the course.

As each group kept its appointment with the teacher, they were shown how to put their information into the appropriate format—PowerPoint, Composer, Word to html, etc. The group with the picture scanned it onto a disk using the teacher's scanner; then they made their web page in Composer and inserted the picture. The groups were then shown how to move their web page onto the server and how to link it to the class web page. Before they left the teacher's office each time, they could view their work linked to the class web page. For the Chapter 4 and 5 project, a digital camera was used which placed the picture onto a disk automatically, so that the scanner was not needed.

Results

The completed class web page project can be viewed at http://www.people.memphis.edu/~brveteto/grant.htm.

The teaching/learning experience for this class was enhanced by the project in several ways.

- The added dimension of researching math topics on the web gave them a sense of the wider application of the math concepts they were learning in class.
- Math understanding was promoted by actually using the formulas in active projects. They collected their own data to use and did not just use values that the book gave.
- Explaining in steps how to work a problem in order to create a PowerPoint slide required that they understand the material well, so they could explain the procedure to others.
- The group members had to learn to cooperate to get the projects completed on time. This is a skill which will have value in university life and work life.
- The student-teacher interaction was increased inside and outside of class over regular classroom situations.

- Technology skills were learned and practiced. A questionnaire given by the teacher at the end of the project showed that the students found the project valuable. They valued the skills and information learned. They recognized the importance of the Internet in their personal, school, and career lives; and they recognized that there was a lot of valuable mathematics information available on the Internet.
- The students in the class used the completed web page to help them prepare for their final exam. The teacher asked each student to view at least three topics off the page in preparation for the final exam.

The value of the project to these students who constructed the web page was in the active learning they did in groups to prepare the topics for publishing and in being exposed to the methods of preparing and publishing their work on the web. As the students used the technology components, the teacher suggested that they go to the U of M Training Center and sign up for a free course on how to use them—PowerPoint, Netscape Composer, etc. This project exposed them to the basics of what is possible in using the web as a learning/teaching tool, but they need to pursue the technology skills further on their own in order to use them proficiently while they are at the university and to use in their jobs after graduation.

Further Plans

The tutorial web page constructed by these students only involves 25 links. The other topics on the page need to be finished. The teacher could finish the web page, or she could run the same project again with another class. The completed web page will be a resource for students who need to review topics and for students who have missed class and need help. It can be used for my elementary algebra students in subsequent semesters and for any elementary algebra student on campus. Quite likely, it will come up in web searches and could also be valuable for students and teachers nationwide as an example of student web publications and for the math information it contains.

Seventh Annual
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The Connected Classroom
April 7-9, 2002

Enhancing Classroom Teaching with Online Web-Based Tools

By: Raj Desai, Ted Loso

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

Materials developed for a web class, used in the regular classroom, improved classroom delivery significantly. A combination of web material and classroom lecture may be the ideal combination for some subjects. We will show how some of the web tools can be used to your advantage in the regular classroom.

University support is vital for web development. We will look at training needs for faculty to offer web-assisted courses. Online grade information, and bulletin boards are generally used with web courses and faculty need training in incorporating these tools in their web-assisted courses.

Introduction

With the widespread use and the rapid growth of the Internet, educational and training institutions around the globe are racing towards using the Internet as a new medium of delivering information. The world-wide-web is a powerful and exciting medium for communication and as such is a valuable resource for faculty for delivering online information. Its ease of use and the capacity as a repository of information and the interactive delivery of content makes it an effective option for furthering knowledge and skill. The advantage of web-assisted content is that they can easily be reviewed and changed for currency and accuracy compared to textbooks. As the world-wide-web becomes a state-of-the art delivery medium there is a need among educators and trainers to obtain knowledge about the tools needed for developing and implementing web-assisted courses.

Design of Web Pages

The web material developers must provide the following information in their web-assisted courses: A header identifying the author and course details, E-mail access to the web material author along with other means of access, information on last revision and date, appropriate citations for text, graphics, video, and audio sources that are not created by the web course author, a link to the University Home Page, a copyright statement, and text elements that can be read while the media are loading1. Some general guidelines2 to follow are: Split your information into logical sections, make sure your starting page is attractive and well laid out, try to have a consistent theme throughout your entire site, try to use colors, styles, and fonts that complement each other.

Try to get to the point on the first page, or at least give people an idea of what your site is about. Make it easy for the viewer to find the information for which they are looking. Ask yourself what things people might be looking for and try to make those things accessible from the main page. Offer a way of contacting somebody in case they don't find what they are looking for. Try to test your pages to see how they look with a different size screen, with the images turned off, a different color resolution, and a different browser. Make sure your site is relatively quick to load, no matter what you put on it. As a rule the page should not be more than 50K. Under normal conditions, this page will load in a few seconds yet allow some fairly good use of graphics. If you have more material, consider separating it on separate pages. Graphics can be stored in a JPEG or GIF format. JPEG format uses "lossy" compression and you can decide the trade off between file size and quality. GIF images will ensure that the images display exactly the same all the time. Use graphics and gadgets sparingly. Some common things that get overused are excessive graphics and background images2.

Web Content

The front end of your web page should include a welcome screen, syllabus, testing information, posting of grades online, and a bulletin board. There are many different web page editors available in the market today that can be used in order to quickly create a functional Web page. Microsoft FrontPage 2000 is relatively easy to use considering our University's familiarity with the Microsoft Office suite. FrontPage 2000 allows you to create Web pages using one of the pre-developed program templates and from blank pages.

Creating Web pages in Microsoft FrontPage is very easy1. Launch FrontPage, select File in the menu bar, select New from the drop down menu, select web from the sub menu, select One Page Web icon from the new dialog box, specify the location of your Web account, and click on the OK button. When you begin using FrontPage you will find that many of the toolbar buttons are the same as the toolbar buttons found in Microsoft Office.

To create a new web page after launching FrontPage, select File from the menu bar, select New from the drop down menu, select Page from the submenu, select the general tab, select the Normal Page template, and click on the OK button. To update a Web page after launching FrontPage, select File from the menu bar, select Open Web from the drop down menu, select the web from the Look In Listing, and click on the Open button. Open the Web page that you wish to edit on your computer in FrontPage by selecting File from the menu bar, select Open from the drop down menu, select File from the listing, and click on the Open button. Your Web page should now be open and ready to edit. The standard toolbar provides many of the same functions that you will find in Microsoft Word.

To insert tables, position your cursor where you would like your table inserted. From the drop down table select the number of rows and columns you would like to have in your table. Click this button to insert a table. This can be used to present information in a tabular format. To make a link select the text that you want linked. Click the link button to create a link to another page. FrontPage has several themes that are ready for you to apply to your Web page or entire site. This is similar to PowerPoint themes. To apply a theme select Format from the menu bar, select Themes from the drop down menu, select the theme that you wish to apply, and click on Ok button to apply the changes. To modify themes, select Format in the Menu bar, select Themes from the drop down menu, select the theme you wish to modify, click on the Modify button to see additional buttons such as Colors, Graphics, and Text. In order for viewers to contact you with questions or comments, you want to create an e-mail link. To do this insert a text or graphic that you want to serve as E-mail link and then highlight it. Click on the hyperlink button. Click on the Make a hyperlink that sends E-mail button. Type your E-mail address in the textbox and click on the OK button. To insert graphics, select the Insert Picture from File button from the Standard toolbar, select the graphics that you wish to add, and click on the Ok button to insert the graphic. Resize the graphic, as needed using the sizing handles. To add a Text Alternative Representation you can click your right mouse button on the inserted graphic and choose Picture Properties. Click Ok button once you have added a brief description of what the picture represents. To save a graphic off the Web that is not copyrighted, click your right mouse button when your mouse is on the picture, point to Save this Image as or Save Image, and in the File Name text box insert your own filename, make sure the proper drive is selected from the Save In list box, make sure the proper subdirectory is selected, and click the Ok button to save the file.

To save Microsoft Word/Excel/PowerPoint 2000 Files as Web Pages, save your file by going to File in the menu Bar, select Save as Web Page from the drop down menu, select your working web page folder to save the file, make sure the file name textbox contains the proper name, and click on the Save button.

Using Web Tools in the Classroom

We have both taught web courses for the past two years. We see the advantages of using web tools in our regular classroom teaching. In fact after teaching one course on the web for the first time, one of the authors realized that the course was not suited to be taught on the web. However the material that had been developed for the web course was ideally suited for use in the classroom3. It improved the classroom course delivery significantly. Also tools such as grade reporting on the web can make the teachers work a lot easier, because you do not have students coming to your office asking for the grades. They can view them online anytime and from anywhere. The course syllabus, power-point presentations, and other class handouts can also be put online4. Again the advantage of putting course material online is that it is available to the student at any time.

University Support for Web Courses

The Center for Scholarship in Teaching and Learning (CSTL) at Southeast Missouri State University helps enhance professors' teaching and students' learning experiences by providing a diverse source of materials on effective teaching, and incorporating technology into education as is done at other universities5. The home page, which includes the syllabus for each of the classes, bulletin board for students to discuss topics with each other, and online grade information for the students' benefit, were all made with the help of the CSTL. Students are happy to have the means to communicate with each other5 as is provided by the bulletin board program.

The School of Extended Learning at Southeast Missouri State University is offering incentives for faculty teaching on-line courses, as are many other universities6. The incentives include a small monetary reward or a reduction in the teaching load during the semester we first teach the course.

Conclusion

In today's competitive industrial environment keeping abreast with emerging Internet technologies and learning/training needs is becoming increasingly important not only for students but also to those involved with education. The internet has become an effective delivery medium for providing easy access to education and training needs, as well as facilitating asynchronous learning. Having a good understanding of the tools needed for developing and implementing course material on the Internet is imperative.

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Faculty Perceptions of Factors That Facilitate the Implementation of Online Programs

By: David Ensminger, Daniel Surry
Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

This paper describes the results of a study into the conditions that facilitate the implementation of innovations. Ely (1990, 1999), identifies eight conditions that facilitate the implementation of technological and program innovations. Ely's eight conditions are Dissatisfaction with the status quo, Skills and Knowledge, Adequate Resources, Rewards or Incentives, Adequate Time, Participation, Commitment, and Leadership. This study originated from Ensminger's (2001), paper on the employment of these conditions during the instructional design process. This study employed an online survey to assess faculty members' perceptions of the relative importance of these eight conditions when implementing an online degree program. The current study used case based scenario questions in order to operationalize the eight conditions. The purpose of this study was to determine which of the eight conditions faculty in higher education perceived as the most influential when implementing an online degree program. Results of the study can assist universities in implementing online degree programs. The results provide information concerning the perceived importance of the eight conditions that facilitate implementation.

INTRODUCTION

As distance education grows in popularity, colleges and universities must work in order to successfully implement online degree programs. Implementation of these programs must occur on both the departmental and intuitional level. Previous research indicates that several factors affect the success of online instructional programs. These include adequate equipment and technological resources, incentives for using technology, comfort level using technology, time for training, need to change existing instructional methods, (Beggs 2000, Lan 2001,). Most of the above stated factors fit into at least one of the eight conditions that facilitate the implementation of innovations or new technology.

Don Ely (1999, 1990a) identified eight conditions that influence the success of implementing innovations.

1. Dissatisfaction with the status quo: an emotional discomfort that results form perceiving the current method as inefficient or ineffective. This condition does not have as much influence as the other seven, (Ely 1999, 1990a).
2. Knowledge and Skills: an assessment of the current level of skills and knowledge of the product users. Ely reports that this condition consistently ranks as one of the most influential condition among the eight, (Ely 1999,1990a).
3. Adequate Resources: the amount of resources currently available to successfully implement the innovation. Resources include finances, hardware, software and personnel, (Ely 1999,1990a).
4. Adequate Time Time: adequate time and compensated time for users to become educated and skilled in how to use the innovation. This condition refers not only top the organization's willingness to provide time but the users' willing to devote learning time for implementation. (Ely, 1999,1990a)
5. Rewards or Incentives: the existence of incentives that motivate users to employ the innovation, or rewards provided by the organization for those who do use the innovation, (Ely, 1999, 1990a).
6. Participation: the involvement of key stakeholders in decision that involve planning and design of the innovation. The condition refers top all stakeholders but emphasizes the participation of product users. (Ely, 1999, 1990a)
7. Commitment: the perception by users that the powerbrokers of the organization (i.e. Presidents, CEO, Vice Presidents) actively support the implementation of the innovation, (Ely, 1999, 1990).
8. Leadership: an active involvement by immediate supervisors in assisting the users in implementing the innovation. (Ely, 1999,1990), This includes providing support and encouragement to users, as well as role modeling use of the innovation.

These conditions hold true for both technological and non-technological innovations. Additionally these conditions traverse institutional and cultural boundaries. Although presented independently, these conditions are interrelated. They affect each other by either supporting or undermining one another, (Ely, 1990b, Ensminger, 2001).

Ely does not present a specific model for implementation. However, by addressing these factors during the adoption phase and development phase universities' increase their chances of successfully implementing an online learning program.

Faculty members represent an import group of stakeholders in this process of implementing web-based instruction on the university level. Knowing how faculty members view the importance of these eight conditions can assist an institution in successfully implementing a web-based instructional program.

Methodology

Participants

Participants were recruited from an instructional technology forum lists sever. Of those who responded (n=56), approximately 65 % worked in higher education settings n=36. Of the sample employed at colleges or universities 28 served at 4-year institutions while eight served at 2-year institutions. The education level of the sample varied; with most participants possessing a master's level degree. The sample includes two bachelors level, 23 masters level, nine doctoral levels, one other, and one not responding. Twenty-eight identified themselves as either faculty or staff, one as upper management, two as middle management, and three as lower management. Thirty-four (94%) agreed that they had played a facilitating role in implementing a new program or technology at their institution.

Questionnaire

The questionnaire used case based questions. Case questions involving the eight conditions centered around the implementation of a new online degree program at a university. Each question presented a single condition. (e.g. Incentives-Implementing a new online degree program when faculty's teaching load is reduced so they can develop online courses.) In order to reduce pattern based responding, half of the case questions were written with the condition being absent. (See appendix one for a list of questions.) Participants rated the success of implementation on a five point Likert scale. The scale ranged from (1) very easy to implement to (5) very difficult to implement.

In addition to the case based questions, respondents were asked to indicate which of the eight conditions they thought were most important to the implementation of new program or technology. Finally, a set of questions were used to assess demographic information, (i.e. gender, level of education and profession).

Procedure and Data Analysis

Members of the ITT form received an e-mail requesting their participation in completing an online questionnaire. This message included the URL of the website home page that explained the purpose of the research. Those who chose to participate could were able to gain access to the questionnaire through the homepage. Participants who completed the questionnaire then submitted their response via e-mail. Participant's response were automatically e-mailed to the researchers. All responses were anonymous and no information on the e-mail provided us with personal knowledge about the participant.

We reversed scored the case based questions that had the condition absent. Next, we generated frequency charts and bar graphs for each of the conditions. Cumulative percentages were calculated for each of the condition-based questions. Finally, we calculated percentages based on participants' perception of the importance of the condition in implementing a new program or technology.

Results and Discussion

The purpose of this study is to evaluate faculties' perceptions of the eight conditions that facilitate implementation; the results will focus only on those percentages associated with the ratings of very easily implemented or easily implemented. Analysis of the case base questions indicates that the participants perceived all the conditions as playing a role in successfully implementing an online degree program. Cumulative percentages for ratings of very easily implemented and easily implemented ranged from 63.9 percent to 100 percent. Dissatisfaction with the status quo evidenced the highest cumulative total while leadership and time evidenced the lowest cumulative percentage.

When considering cumulative totals all conditions appeared valuable in the implementation process. However, faculty perceived several conditions as more important than the rest. These conditions had a larger percentage of participants rating the case questions as very easily implemented. These conditions include recourses 86.1 percent, knowledge and skills 77.8 percent, and dissatisfaction with the status quo 63.9 percent. (See table one). These three conditions also had the highest cumulative totals, with a range of 97.2 percent to 100 percent. Time had the lowest percent for very easily implemented 2.8 percent, and the lowest cumulative percentage 63.9 percent.

From the results of this study, it appears that faculty considers all eight conditions as important when implementing online programs. Of the eight conditions studied, adequate resources (i.e. equipment, personnel, and finances) stand out as the most important of the conditions when implementing an online program.

Faculty also perceived adequate resources as the most important condition when implementing a new program or technology. Along with adequate resources faculty considered adequate skills& knowledge, and dissatisfaction with the status quo important.

Theses results indicate that faculty think that universities must provide the needed resources to support online degree programs. Additionally, those implementing the program (i.e. the faculty) must possess the needed design, develop, and instructional skills in order for the program to be successful. Finally, if faculty feel that the current methods of instruction are inadequate the level of motivation for changing to an online program increase. Although results indicated that this condition was considered important, the original question was stated with the condition being absent, (i.e. Implementing a new online degree program when faculty prefer the current in class program). At institutions where faculty are satisfied with the current methods of instruction personal interest in teaching online course or using technology in instruction may motivate some faculty to develop online courses. For those not personally motivated institutions may have to provide incentives or rewards in order to implement online programs.

The results of this study support this idea. Approximately seventy two percent of the participants indicated that incentives and rewards played an important role in implementing a new program or technology. Results also indicate that faculty consider participation in designing developing and decision making important when implementing an innovation. This information supports the notation that universities need to view faculty as important stakeholders when developing innovations that will directly affect faculty members, (i.e. online degree programs). Finally, faculty considers the level of commitment from institutional leaders, (i.e. Presidents, Vice Presidents) as an important when implementing innovations. This requires that University leaders become actively involved in the implementation processes in order to show visible support for the changes.

This research provides universities with a better understanding of how one important set of stakeholder (i.e. faculty) view the importance of the eight conditions that facilitate implementation. Although, Ely's conditions address the factors that help facilitate the implementation of an innovation, these conditions do not provide us with a model. Universities must still face the problem of how to successfully implement online learning programs. Surry, Robinson, & Marcinkiewicz (2001) present a model that can assist universities. The RIPPLES model directly and indirectly address all the eight conditions that facilitate implementation. The RIPPLES model addresses the resources, infrastructure, people, policies, learning, evaluation and support when implementing instructional technology programs. Universities just starting to implement an online learning program can use the RIPPLES model as a foundation for developing an implementation plan.

Conclusion

As universities face the task of developing online programs, they must focus on the eight conditions that facilitate implementation. Because faculty play a key role in the implementation process universities must consider faculty members' perceptions of these eight conditions. These perceptions can guide institutions to focus on the most important conditions as perceived by faculty. By doing so universities can better design implementation plans that are more likely to be met with success among faculty than be met with resistance.

Author's Notes

Questions or comments about this paper should be directed to David Ensminger, University of South Alabama, College of Education, UCOM 3700, Mobile, AL 36688. Email: milminger@earthlink.net. Daniel Surry and David Ensminger are Co-Directors of the Implementation Phase Research Project (IPRP). Papers related to this topic are available online at the IPRP's website: http://iphase.org.

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Appendix A

Implementing a new on line degree program when faculty prefer the current in class program.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when the faculty is not familiar with on line instructional methods.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when there is not enough computer software for faculty to use to design courses.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement

Very Easy to Implement
Implementing a new on line degree program when faculty's teaching load is reduced so they can develop on line courses.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement

Implementing a new on line degree program when faculty are given a stipend for each on line class they teach.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when faculty were included in decisions about what courses should be placed on line first.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when the University President has only supported the program through a couple of vague memos.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement
Implementing a new on line degree program when the department chair is excited about and has openly endorsed the program.
Very Difficult to Implement
Difficult to Implement
No Effect on Implementation
Easy to Implement
Very Easy to Implement

Overall, which of the following 8 conditions do you think are most important in facilitating the implementation of a new program or technology (check all that you think are most important)?
Dissatisfaction with the current way things are done
Workers have necessary skills and knowledge
Adequate resources
Rewards and incentives
Time to learn the new program
Participation in Decision Making
Commitment from Upper Management
Leadership from Lower Management

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Flesh and Bone: Information Literacy, Teaching, and the Connected Classroom

By: Kathleen Lant

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

I am an invisible man.... I am a man of substance, of flesh and bone, fiber and liquids—and I might even be said to possess a mind. I am invisible, understand, simply because people refuse to see me.

Ralph Ellison
Invisible Man, 1952

Though You can fashion everything
From nothing every day, and teach
The morning stars to sing,
You have lacked articulate speech
To tell Your simplest want, and known,
Wailing upon a woman's knee,
All of that worst ignominy
Of flesh and bone.
William Butler Yeats

"A Prayer for My Son," 1928

These two works—one by an American novelist and one by an Irish poet and playwright—affirm remarkably different views of the body, of the flesh and bones which transport us around this world. For Ellison, the body is something he asserts—he is a man of *substance*. He wishes to be seen, acknowledged, and dealt with as a *presence*. Ellison claims and affirms his body as a political statement, even as a protest. For Yeats, the body is something that reins in the transcendent and glowing articulations of the spirit, an entity which impedes the full expression of our creative power. But what is common to both passages is that Ellison and Yeats accept unquestioningly that flesh and bone can be distinguished clearly—devastatingly for Ellison and triumphantly for Yeats—from spirit or essence.

Mind and Body: From Caves to Cyberspace

Undoubtedly the Greeks set us up for this bifurcated vision of the human experience. The pre-Socratics had their "appearance/reality distinction," and then Plato convinced us of a "forms/world split" because of which we were consigned—if we proceeded without enlightenment—to an existence within the cave of our own sensory perceptions (*Dictionary of Philosophy of Mind*). And even now, the familiar Biblical excuse for indulgence—"The spirit is willing but the flesh is weak" (Mark 14:38)—strikes us as a perfectly good reason for choosing the crème brûlée over the unadorned fruit compote. Most of us came to understand, after our freshman year in college, that the chair we sat in during our philosophy lecture was—at least from Plato's perspective—simply a flawed manifestation of some more perfect, more ideal, more essential chair. This reputed cleavage between mind and body has, then, been with us for a long time.

Now, with the advent of the Internet and the concomitant proliferation of resources, databases, communications protocols, and digital "cultures" available to us, the most compelling manifestation of this traditional dualism in the early Twenty-First Century may be the split between mind and body, between thought and action, between being and doing that we experience in our engagement in "life online." Internet enthusiasts assure us that the age of a fixed, immutable, and physically determined identity is past and that we can liberate ourselves from corporeal burdens and preconceptions to become free online subjects. In cyberspace, we may now "enter into creative relationships with one another in a manner said to be unrestricted and uncontaminated by the burdensome identifiers of race, gender, geographic origin, socio-economic contingency or physical appearance" (Knights).

In a discussion of MUDs (Multi-User Domains or networked virtual realities which permit one to interact online with others in a virtual space), Sherry Turkle asserts that in cyberspace, in the virtual arena in which the body is left behind, "the self is not only decentered but multiplied without limit. There is an unparalleled opportunity to play with one's identity and to 'try out' new ones" ("Constructions"). Elsewhere, she explains that "In…computer-mediated worlds, the self is multiple, fluid, and constituted in interaction with machine connections; it is made and transformed by language; sexual congress is an exchange of signifiers; and understanding follows from navigation and tinkering rather than analysis" (*Life on The Screen*, 15). Finally, in her foreword to *High Wired*, Turkle makes the point that "The anonymity of most MUDs (one is often known only by the name one gives to one's persona) provides ample room for individuals to express unexplored parts of themselves" (xii). For Turkel the life of the mind in virtual realms is liberating and even enlightening and fulfilling.

Distance Learning: The Disembodied Scholar, the Intangible Student

This abandonment of limiting, real spaces for such liberating, virtual realms has been made possible by digital environments of many kinds. And all have had a profound impact on those of us involved in teaching. Institutions of higher education worldwide have embraced, indeed, have run headlong to embrace (as David Noble says), a kind of online education which makes possible community, conversation, and interactivity among virtual teachers and students. The zeal with which proponents of online teaching describe these cyber encounters is awe inspiring and frequently unnerving—perhaps because such enthusiasts eagerly encourage us to view the physical as a liability to be disposed of in our effort to learn, to teach, and to build the online campus. Unlike Ellison's *Invisible Man*, these educators view the body as an encumbrance to be—in Yeats's terms—transcended.

Cynthia Haynes, for instance, extols the virtues of the educational MOO (another sort of networked digital reality providing students and teachers a virtual space in which to interact) and asserts the fustiness of the traditional classroom: "Somehow, between the 1960s revolution and the age of digitized books, we found ourselves trapped in the conventional classroom, haunted by stifled learning, oppressive seating arrangements, time and space—boundaries we long to transgress. And then there was MOO" ("Help," 161). It is telling that Haynes is positively Platonic in her denigration of the physical. It is the mental, the digital, the *un*embodied that frees us and enables us to learn. Rachel Hartigan Shea and Ulrich Boser characterize online education in this way: "the Internet has kicked learning out of the classroom and into cyberspace, making education available anywhere, anytime, even "just in time" (1). In a newspaper article on online learning at the University of Massachusetts Lowell, Caitlin Moody praises the power of virtual education to permit a student to transcend the physical limitations of her existence:

> While earning her degree from the University of Massachusetts at Lowell, Jeanine Marie Tamboli kept a hectic schedule.
>
> She would wake each morning at 5 to catch the train to her Boston office, often reading course material during her commute. Each afternoon she returned home around 2 to care for her children, William, 4, and Christina, 9, and to run her home-based computer business.
>
> Tamboli would have had no time to earn her degree. But one thing made it possible: Her courses were offered online, and she could log on at 9 p.m., after her children had gone to bed.
>
> "I am a mother of two kids, my son has health problems, my husband works Saturdays, and it was the only way I could finish my degree," she said. Tamboli earned her degree in information systems online through UMass-Lowell's distance learning program.
>
> Practically unheard of five years ago, distance learning—taking courses online—is the newest trend in higher education, with classes filling up as soon as they are offered, according to college representatives in the North region.
>
> Online learning has rocketed students from the classroom into cyberspace, where time constraints and travel no longer prevent them from earning degrees. (Moody)

The Student/Teacher Body and Emergent Phenomena

But despite the fact that many educators happily enumerate the virtues of anywhere, any time learning; despite the fact that some even seem to believe that learning can be modularized and "delivered" in appropriate chunks, "just in time," many cling to traditional notions of the classroom and classroom instruction. In fact, many would insist that the bodily presence of students and teachers in the physical classroom is a precondition to learning, and some may even wonder if our reverence for the physical has been lost and our understanding of its place in learning forgotten.

Van B. Weigel, for instance, believes that deep learning—"learning that promotes the development of conditionalized knowledge and metacognition through communities of inquiry"—is possible only if teachers use both online and onground resources. Weigel explains that to allow for the development of the conceptual understanding and reflective attitudes necessary for deep learning, an instructor must provide opportunities for modeling, coaching, scaffolding, articulating, reflecting, and exploring. All such activities are time consuming, intense, and—it goes without saying—demanding on both teacher and student. But with the resources of the Internet and online communication, Weigel claims, such powerful student-to-teacher, teacher-to-student, and student-to-student interactions can be enabled and fostered: "From a practical stand point, deep learning and e-learning are inseparable. It is simply not economically feasible to provide a broad cross section of students with depth educational curricula unless Internet technologies are used" (5).

But Weigel adds that such technology is best used as an *adjunct* to the traditional classroom. Nor can we, he adds, hope to do more easily online what we already do well onground: "the teacher's passion for intellectual inquiry and love for his or her subject" and "the unique chemistry of each class…are best experienced in real time" (26). Thus, even as he argues for the enhancement of post-secondary education with technology, Weigel insists on the necessity of the embodied. He calls to our attention as well the importance of emerging phenomena in the classroom. *Things happen* that we did not predict. And while these unforeseen events may be enacted online, much of the richness of discovery and of possibility is available only in the immediate presence of the event and the participants themselves.

In a compelling work on the philosophical, social, and personal implications of the Internet, Hubert Dreyfuss asks what effect the Internet is having on education and life in the human community. After considering the efficacy of the Internet and digital simulation as teaching tools and after exploring the "loneliness and depression" (3) that frequently accompany excessive devotion to life online, Dreyfuss concludes that what is most significant in certain human interactions is "people's actual embodied presence to each other" (2-3). Learning which is decontextualized in any way, asserts Dreyfuss, is not ultimately effective learning and can accomplish only very basic skill development. Dreyfuss goes on to criticize those who would move us too far from bodily presence: "some enthusiasts rejoice that, thanks to progress in achieving such telepresence, we are on the way to sloughing off our situated bodies and becoming ubiquitous and, ultimately, immortal" (50).

Dreyfuss maps the "stages in which a student learns by means of instruction, practice, and, finally, apprenticeship, to become an expert in some particular domain and in everyday life" (32). He questions whether "the stages [can] be implemented and encouraged on the Web" (32). After a careful exploration of these stages, Dreyfuss demonstrates that "disembodied interactions" (51) are insufficient to real learning. Because apprenticeship is—for Dreyfuss—an important aspect of learning, the corporeal presence of instructor/mentor and student in the same physical area is vital.

While apprenticeship may certainly be carried on virtually and while many of us have coached students and colleagues by means of email, Dreyfuss considers at length the demands of instructional modeling and student apprenticeship. He finds the cyber classroom lacking for the practice of these essential elements of teaching and learning. The loss of eye contact in virtual spaces, the inability to observe the instructor fully as he/she deals with information or materials, and the subtle and sometimes not-so-subtle responses of the class—all shape the learning experience, all embody the instructor as a model in ways at once intellectual, emotional, and physical. And all embody the student as a full participant/apprentice in the learning community: "Leaving the body behind would have pleased Plato, who subscribed to the saying that the body was the tomb of the soul and followed Socrates in claiming that it should be a human being's highest goal to 'die to his body' and become a pure mind" (5). But Dreyfuss warns that for teachers such a move must be carefully considered:

we should remain open to the possibility that, when we enter cyberspace and leave behind our animal-shaped, emotional, intuitive, situated, vulnerable, embodied selves, and thereby gain a remarkable new freedom never before available to human beings, we might, at the same time, necessarily lose some of our crucial capacities: our ability to make sense of things so as to distinguish the relevant from the irrelevant, our sense of the seriousness of success and failure that is necessary for learning, and our need to get a maximum grip on the world that gives us our sense of the reality of things. Furthermore, we would be tempted to avoid the risk of genuine commitment, and so lose our sense of what gives meaning to our lives....if our body goes, so does relevance, skill, reality, and meaning. If that is the trade-off, the prospect of living our lives in and through the Web may not be so attractive after all. (6-7)

As we noted earlier, Sherry Turkle asserts the absence of risk as one of the most positive aspects of digital realities. But for Dreyfuss the absence of risk proves a limitation to effective teaching and meaningful learning. In fact, Dreyfuss argues that risk is an necessary component of learning: "only emotional, involved, embodied human beings can become proficient and expert. So, while they are teaching specific skills, teachers must also be incarnating and encouraging involvement" (48):

The idea that the teleteacher could equal the powerful effect of a skilled teacher who is present in the same room with her students seems unlikely. Without the sense of the mood in the room as well as the *shared risk*, the involvement of the students with a movie-actor teacher will almost surely be less intense than that of students and teachers reacting to each other's presence." (62, emphasis added)

The Cultured Classroom

Thus Dreyfuss and Weigel call for an embodied presence, a committed presence, in the classroom. Although Jerome Bruner does not specifically address the issues of modeling and apprenticeship or raise the question of physical presence in his considerations of learning, his vision of the learning environment and the teacher's role in that environment is relevant:

The teacher can...open wide a topic of locution to speculation and negotiation. To the extent that the materials of education are chosen for their amenableness to imaginative transformation and are presented in a light to invite negotiation and speculation, to that extent education becomes a part of..."culture making." The pupil, in effect, becomes a party to the negotiatory process by which facts are created and interpreted. He becomes at once an agent of knowledge making as well as a recipient of knowledge transmission. (*Actual Minds, Possible Worlds*, 127)

The late Bill Readings also brought to our attention the dialogic quality of education. He emphasizes, like Bruner, the need for the cultivation of a culture of learning. In teaching, learning, and life, Readings tells us, we must "pose a challenge to the ever-increasing bureaucratization of the University as a whole." To do so we need to see the entire institution as a place where we *listen to thought*: "to listen to Thought, to think beside each other and beside ourselves, is to explore an open network of obligations that keeps the question of meaning open as a locus of debate" (164-5). Meaning, for Readings, is not fixed or immutable. It is emergent, a function and product of the conversing, thinking, listening learning community.

The role of the teacher in this negotiatory, dialogic community is central. Bruner foregrounds the importance of the teacher in this learning community when he fondly remembers his science instructor, Miss Orcutt. She served as a model to him in her engagement with the subject, she served as a challenging interlocutor in her engagement with the students: in her teaching she was, Bruner says, "inviting me to extend *my* world of wonder to encompass *hers*. She was not just informing me. She was, rather, negotiating the world of wonder and possibility....She was a human event, not a transmission device" (126).

As teachers, thus—as "human events"—we impart a special culture to our students, a way of being, many ways of thinking. In terms of modeling our professions and our disciplines, we must let students "see" us, observe us, encounter us as we manage information and as we create knowledge and achieve wisdom with them. This meeting of the body and the mind happens best in the enhanced classroom, which is really nothing more than the traditional classroom enhanced with a display system, a computer, a connection to the Internet, a television screen, and a VCR. In this environment, we model for students all our thinking strategies, all our ways of working, all our systems of inquiry and ethics. We *embody* our discipline and our practice.

As teachers, we must work before our students with the complete armamentarium of our respective fields: the books, papers, machinery, cables, plugs, pens, blackboards, brochures, websites. Everything we use and everything we do must be brought to their awareness. Thus, the blind students in our class comes to understand how material is made available for the student who cannot see. The sighted student observes how the instructor struggles with intractable and difficult computer machinery. All students watch as we seek answers together to the questions the class poses. We consult our books, we consult online resources, we decide when the library will help. We model finding information, dealing with information, assembling information, and turning information into learning, in the real physical world. Learning is not solely a province of the mind…the body learns…no matter *how* it takes in the information.

Dreyfuss insists that physical presence is a precondition, then, not just for learning but also for culture building. And this culture building serves for our students as an introduction to our respective disciplines:

> Like embodied commonsense understanding, cultural style is too embodied to be captured in a theory, and passed on by talking heads. It is simply passed on silently from body to body, yet it is what makes us human beings and provides the background against which all other learning is possible. It is only by being an apprentice to one's parents and teachers that one gains what Aristotle calls practical wisdom—the general ability to do the appropriate things, at the appropriate time, in the appropriate way. If we were able to leave our bodies behind and live in cyberspace and chose to do so, nurturing children and passing on one's variation of one's cultural style to them would become impossible. (48)

If we pay close attention to Dreyfuss's selection of detail, it becomes obvious why the enhanced, onground, physical classroom is the ideal place for learning: he mentions the learning we gain from being apprentices to our parents. To imagine a parent teaching a child—the prototypical learning situation—by means of a chat room or an online class is, clearly, ludicrous.

Information Literacy and the Enhanced Classroom

In bringing the power of the Internet into the classroom, in "blending" our classes, new priorities for teaching emerge. Considering how media and the Internet change learning, Manuel Castells observes that "Internet-based learning is not only a matter of technological proficiency: it changes the kind of education that is required both to work on the Internet and to develop learning ability in an Internet-based economy and society." Castells goes on to describe this new kind of learning:

> The critical matter is to shift from learning to learning-to-learn, as most information is on-line, and what is really required is the skill to decide what to look for, how to retrieve it, how to process it, and how to use it for the specific task that prompted the search for information. In other words, the new learning is oriented toward the development of the educational capacity to

transform information in to knowledge and knowledge into action. (259)

What Castells has perfectly outlined here are the goals of information literacy. In language very similar to Castells's, The Presidential Committee on Information Literacy of the American Library Association declares that to possess information literacy an individual must "be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (*American Library Association: Presidential Committee on Information Literacy: Final Report*). The authors of "The Model Statement of Objectives of the Association of College and Research Libraries" make the similarities between Castells's vision of new learning and information literacy resonate even more sharply:

The role of [information literacy] instruction is not only to provide students with the specific skills needed to complete assignments, but to prepare individuals to make effective life-long use of information, information sources, and information systems. A strong information literacy instructional program should include how information is identified and defined by experts; structured; intellectually accessed; and physically organized and accessed. (qtd. in Wright, 23)

As early as 1989, the ALA identified information literacy as "a survival skill in the Information Age" and delineated the structure of the new, information-focused educational environment:

The school would be more interactive, because students, pursuing questions of personal interest, would be interacting with other students, with teachers, with a vast array of information resources, and the community at large to a far greater degree than they presently do today. One would expect to find every student engaged in at least one open-ended, long-term quest for an answer to a serious social, scientific, aesthetic, or political problem. Students' quests would involve not only searching print, electronic, and video data, but also interviewing people inside and outside of school. As a result, learning would be more self-initiated. There would be more reading of original sources and more extended writing. Both students and teachers would be familiar with the intellectual and emotional demands of asking productive questions, gathering data of all kinds, reducing and synthesizing information, and analyzing, interpreting, and evaluating information in all its forms. In such an environment, teachers would be coaching and guiding students more and lecturing less. They would have long since discovered that the classroom computer, with its access to the libraries and databases of the world, is a better source of facts than they could ever hope to be. They would have come to see that their major importance lies in their capacity to arouse curiosity and guide it to a satisfactory conclusion, to ask the right questions at the right time, to stir debate and serious discussion, and to be models themselves of thoughtful inquiry. (American Library Association)

The Association for College and Research Libraries elaborates the principles set forth by the ALA in emphasizing the importance of information literacy in the whole life of the educated individual: "Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self directed, and assume greater control over their own learning." The ACRL goes on to identify five abilities necessary for information literacy. In any situation—personal or professional—the individual who has cultivated information literacy will be able to

- determine the extent of information needed,
- access the needed information effectively and efficiently,
- evaluate information and its sources critically,
- incorporate selected information into one's knowledge base,
- use information effectively to accomplish a specific purpose,

- understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.

Seeking to merge the goals of information literacy with the skills of computer competence, librarians and faculty at California Polytechnic State University shape the skills of the literate individual in terms of his/her mastery of these abilities:

- define the research topic,
- determine the information requirements for the research question,
- locate and retrieve relevant information,
- use the technological tools for accessing information,
- evaluate information,
- organize and synthesize information,
- communicate using a variety of information technologies,
- understand the ethical, legal, and socio-political issues surrounding information and information technology,
- use, evaluate, and treat critically information received from the mass media.

Teaching and Information Literacy

The education of the whole person, the cultivation of the student as lifelong learner, and the introduction of literacy skills at all levels of personal and professional inquiry—these, then, are the goals of information literacy. And these goals are met most fully in an enhanced or blended classroom in which students and teachers meet among all the tools available to them.

To ensure that my students cultivate the skills necessary for information literacy, I follow three guidelines: I contextualize all assignments, I build the use of information resources into every assignment, and I model in every interaction with my students the skills of information literacy. I do not simply "assign a research paper," nor do I make any assignment that culminates solely with one completed paper. I walk my students through the process of building a topic, asking questions, finding materials, and creating a written document or a media presentation.

If, for example, I want my students to grapple with the difficulties of Mark Twain's *Huck Finn*, I might ask them to interpret that novel for a group of readers in early Twentieth-Century America. By insisting on a specific context for their work, I force my students to be aware of the appropriateness of their writing, their thinking, their presentation, and their selection of supporting materials to a group whose values they don't fully comprehend as they begin their work. They must ask relevant questions: who read novels in the early Twentieth Century, how would we know anything about such people, where might we find out what they thought if *Huck Finn*? Of course, as a starting place they will need, as well, to understand their own reading of *Huck Finn* as an emergent phenomenon, having to do as much with their own time as it does with the work itself. And in order to offer an "interpretation," they must be fully aware of what interpretation means and what steps are involved in building an interpretation.

What this approach makes clear is that I am not simply providing my students with content. I am challenging them to complete a wide range of tasks which require information literacy, an understanding of the culture of literary studies, and some awareness of the protocols of communication. Probably the most significant aspect of this work for our students is the collection of strategies they acquire to become successful learners.

Without the traditional research paper assignment, I build the need for finding information, for conducting research, for answering questions, into the fabric of my students' work with me. As they work, I engage myself fully in the process of their work, modeling as we proceed, appropriate strategies for reaching the goals I have set. I *do* believe that students working in this way reach a respectable level of information literacy, and I believe that the skills and strategies they learn will support them as lifelong learners. I have included an entire selection of assignments for such a project at http://imctwo.csuhayward.edu/klant/InfoComp/sampleassignments.htm.

With respect to students' culminating project, I might ask that they prepare a media enhanced discussion of Mark Twain's possible audience for class presentation rather than a paper. Students would need to find appropriate images, textual resources, perhaps even music. They would need to cite the materials properly, and they would be required to prepare their materials in such a way that all students could access them and learn from them—even students with accessibility limitations. I might ask them to respond to my questions about their work-in-progress by means of email or reports in specific formats so that they came to be comfortable using various information-handling tools. It is important to remember that even though students present their material with a tool such as PowerPoint or Astound (presentation applications), as much research and writing can be built into the assignment as was built into the more conventional research paper.

For faculty, the most significant aspect of this work is the clarity we must bring to an understanding of our respective fields. If we are, indeed, providing our students guidance in the culture of literary study, we must ourselves be clear on our underlying assumptions and orientations. I have provided a worksheet on "Information Literacy and Teaching with Technology," which offers a guide to reflecting on the structure of your discipline. You may find this resources at http://imctwo.csuhayward.edu/klant/InfoComp/infolit.pdf.

In the past, we have occasionally taken the structure and theoretical frameworks of our respective fields for granted. Without ever discussing these matters with our students, we frequently assumed that they-–and we—knew what "geology" was or "algebra" or "poetry," that we were clear on the anatomy of our work because that anatomy was self evident—a poem is a poem, literature is literature, and equation is an equation. But now that we all—from the youngest of students in the primary grades to the most venerable of scholars in research institutions—create, format, reformat, move, and manage information with digital resources, the information structure of our work has come more fully to our attention.

The information structure of our respective disciplines has also become more complicated: the proliferation of information on the World-Wide Web has deprived us of the traditional resources we have relied upon to organize information for us. Dreyfuss reminds us that the Web is hyperlinked; that is, it exists as a series of *unrelated, disorganized* connections. Unlike a library or a database or a book, the Web is organized by *no* hierarchy. Hyperlinks on web pages are random because "No authority or agreed-upon catalogue system constrains the linker's associations" (8). Dreyfuss goes on to point out that the "problem of retrieving relevant information from a corpus of hyperlinked elements is as new as the Net. The traditional way of ordering information depends on some one—a zoologist, a librarian, a philosopher—working out a classification scheme according to the meanings of the terms involved, and the interests of the users" (9). This classification system is the structure, the bones and skeleton, of our respective disciplines. When students seek information on the Web, they are unsupported by these structures. This is what we must offer our students, what we must show them in our teaching—the shape of our field, the processes of our work. As they add these conceptual structures to their understanding, they will be better equipped to use and evaluate information.

To put it simply, if we consider teaching the meeting of mind and body for the illumination of each, the place where flesh and bone join essence and spirit, we can enable good teaching that calls upon every resource *we* use in our daily lives as teachers and scholars. We can share this panoply of riches, this encyclopedia of practices, fully with our students if we use all that is available to us in the digital age. Not just the traditional classroom, not only the virtual space, but both together.

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From Key Handouts to More Hands On Keys: Planning for the Progressive Use of Technology by Faculty

By: Mary Nunaley, David Warner

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

Two faculty members from Volunteer State Community College were assigned the charge: "design an institution-wide faculty training and development program for distance learning." The approach to planning began by reexamining the evolution of their use of technology, culminating in online course delivery. The presenters explore the stages through which faculty progress, which can then become the basis for an institution's faculty training and development program.

Background

Faculty members are being asked to integrate more technology-usage into their courses, not only by students, but also, by colleagues and administrators. Within an institution, a wide range of technology skills and/or experiences with Distance Learning courses exists among faculty. When an institution considers use of the WWW, web-authoring and computer-mediated communication tools, planners must recognize that faculty skills and knowledge exist on many levels. Thus, an institutions' planning to provide faculty training and support should address the various technology-usage "entry-levels" of faculty and succeeding "development stages" of existing Distance Learning faculty.

Two faculty members at Volunteer State Community College were assigned the mission: "design an institution-wide faculty training and development program for distance learning." The authors were granted partial course release time in order to complete the task. The faculty members have instructional responsibilities in the Humanities Division (Department of Communication) and the Business Division (Hospitality Services). Both are members of their institution's Distance Learning Committee, a cross-section of academic divisions and administrative offices, such as the Student Services and the Admissions and Records offices. The Distance Learning Committee reviewed the distance learning planning and approach.

Preliminary Planning

The approach to planning began with a re-examination of the evolution of the faculty member's use of technology, culminating in online course delivery. Reflection suggested a pattern, a series of stages faculty progress through in their development of course materials and the use of computer-mediated communication tools in their courses.

Individual faculty members' evolving use of the WWW and computer-mediated communication may be viewed as a series of stages faculty progress through as course materials are developed and communication tools are incorporated into courses.

Five development stages were proposed: communication-emphasis, content-emphasis, integration of course content and communication activities, use of a course-management system, and course conversion to an online or web-based delivery stage. Development of training and resources for faculty must anticipate a variety of skills and prior experiences with the worldwide web, web-authoring software, communication tools, and course design. The five stages of faculty involvement will serve as the focus areas to develop training and resources for faculty development.

Faculty Survey

A variety of course-delivery formats may exist within an institution's distance learning program. At Volunteer State Community College, distance learning includes ITV classrooms and courses that are available on CD-ROM, videotape, and online (as web-based courses). In addition, many courses are web-enhanced. Each of the college's five divisions offer distance learning sections of courses, with several courses available in a variety of formats.

A component of the initial planning for faculty training and the development of faculty resources for course development started with an online faculty survey. The Distance Learning Survey message and link was e-mailed to full- and part-time faculty, with an additional survey of adjunct faculty planned. Faculty members were asked to respond to a series of questions, organized under Interactive TV, Videotape classes, web-enhanced courses, and online courses.

The survey used a combination of radio buttons, one-line and scrolling text boxes and drop-down menus to organize responses in the survey areas. The question format for ITV, videotape, web-enhanced courses and online courses was essentially the same. Faculty were asked whether they had taught a course using the format, whether they had developed a course for a particular format, whether they had ever taken a course using that format, what training could be provided to encourage course development and what training could be provided to assist the faculty member to improve instruction.

Course Standards

Prior to designing training and resources for faculty, an initiative to establish standards for distance learning courses was begun at the institution. The Distance Learning Committee Chair appointed members to serve on a sub-committee to examine standards and make recommendations to the full committee for review and recommendations for adoption. Sub-committee members were a cross-section of faculty and administrators. Administrators represented Admissions and Records, Student Services and Public Relations while faculty representatives were from Business, Humanities, and Math and Science divisions.

Members of the standards sub-committee reviewed actual and implied standards from a variety of sources. Active distance learning faculty members were requested to make suggestions in a variety of areas, including meetings (actual or online), orientations, course syllabi, calendars and scheduling, assignments, grading and communication.

A student focus group was used to discover student expectations in the same areas as the distance learning faculty members were polled. The institution's distance learning Instruction Evaluation questions were used for this information-gathering aspect.

Finally, requests for copies of existing distance learning standards from the state sister-institutions was made. Reviews of online university websites were made and reviews of pertinent print and electronic resources were conducted.

The sub-committee proposed standards in five areas: syllabi, schedule/calendar, course materials, communication, and the learning community. Proposed standards were further presented as "must" or "should" statements. The "must" statements were proposed as required of all courses while the "should" statements were proposed as recommended course enhancements.

In addition to recommended standards for review, the sub-committee recommended a course peer review process. Peer reviewers may be members of the faculty members division, or a team of reviewers from a variety of divisions.

Stages for Distance Learning Course Development

Development Stage 1: Faculty members use or plan to use communication tools such as e-mail, message boards and chat features to communicate with students outside the classroom.

Initially, faculty may begin their integration of technology with "resource" sites, communication tools, or course websites with basic course materials, e.g., a welcome or index page, a syllabus and a calendar. The beginning use of computer-mediated or other electronic communication tools and the development of web-based course materials can be concurrent, but interviews suggest, in most cases, an either-or approach, either computer-mediated communication or a website.

At this stage, faculty members use or plan to use communication tools like e-mail, message boards, instant messaging and/or ICQ and chat features to communicate with students outside the classroom.

Faculty may require training and resources for e-mail, discussion, chat, and/or instant messaging. In addition to assisting faculty with software, resources for pedagogical issues should be addressed. Examples are: What are best practices? How will electronic communications improve the actual course? Are there security issues involved? How does opening up email communication alter the learning that typically occurs in the classroom?

Training issues include online etiquette, attachments, use of "emoticons," and threaded discussions, to name a few.

During this stage, faculty members are also beginning to think about ways to expand the horizons outside the classroom. This thinking may often start before the communication function is fully explored - placing the syllabus and handouts online for student access are two common thoughts of faculty.

Stage 1 is a "communication-emphasis" development stage. Faculty members are engaged in the development of communication approaches that reach beyond the four walls of the traditional classroom

Development Stage 2: Faculty members use or plan to use FrontPage or other) web-authoring software to develop course materials and enhance student experiences.

As noted above, even before the content-emphasis development stage has begun, faculty often start thinking about how they can use the Web to enhance their courses, including links to websites, having students do research assignments online and starting to become comfortable with the technology and terminology. Oftentimes, faculty will begin to learn a little bit about HTML before they even venture near web-authoring software.

Technical concerns faculty are interested in at this stage include: ADA Requirements, Bandwidth Issues, and appropriate software for multi-media enhancements.

Pedagogical Issues include copyright and creation of content that goes beyond simply placing lecture notes or lecture outlines online.

Training and resources faculty will require assistance with include: text formatting, graphics, page design, use of colors and FTP.

Although the entry-level for faculty may be a communication-oriented or a content-oriented approach, content development can follow communication. Institutions will often already have an e-mail system for student and faculty communication in place.

Stage 2 is a "content-emphasis" development stage. Faculty members are beginning to explore web-authoring software and are thinking about what course materials to make available online.

Development Stage 3: Faculty members have combined or plan to combine the use of communication tools and course website materials (combining "Development Stages" 1 & 2) for course assignments

Faculty may still be using communication tools that are separate from the course website at this stage. For example, faculty may be using an institution e-mail address, a home address, or a third address such as Hotmail or Yahoo, with a course website and course materials on the institution server.

As technology-use expands or broadens, communication tools and course materials are usually integrated, and that integration can lead to a more "connected," collaborative student learning. Faculty may combine faxed or e-mailed communication assignments with assignment directions and/or resources posted on a course website. At "Development Stage 3," faculty members have progressed to the use of both communication tools and web-based course materials for one or more individual courses or sections of a course.

A significant pedagogical issue at this stage includes developing a plan for building community online.

Training needs include additional instruction in using web-authoring software, facilitating student interaction in the online environment and assisting students with basic technical help issues.

Stage 3 is an "integrated content/communication" development stage. As faculty members place course materials online and use electronic means to communicate with students, an integration of the two begins to develop. Concerns of faculty members may focus on student interaction with course materials and communication of student responses between instructor and student.

Development Stage 4: Faculty members have transferred or plan to transfer web-enhanced course content, classroom materials and communication initiatives to a course management system.

An increasing integration of the use of a separate communication tool (like Microsoft's Outlook mail program) and a separate website for course materials invites faculty to desire a more integrated approach. A course management system will offer faculty the opportunity to combine course materials and communication tools at one location. Integrating the communication and course materials at one site, combined with the additional features offered by a course management system like WebCT (a calendar, grade book and testing, for example) allows for the more expedient use of student and instructor time.

Training needs include using the course management system features and integrating outside sources such as email into the existing course management system.

Stage 4 is an enhanced "course management-oriented" development stage. Up to this stage, faculty members may have been using a "separated" approach. For example, course materials exist on a website, but a separate e-mail program, like MS Outlook may be used for communication, or course assignments are faxed. Faculty members can enhance their courses by using a course management system, combining many class activities at a single site. Examples of course management systems are WebCT and BlackBoard.

Development Stage 5: Faculty members are converting or revising a course site or have considered conversion of web-based course content and classroom materials to an online course.

At "Development Stage 5," faculty members are ready to consider a course conversion to an online or web-based course environment. The WebCT e-mail discussion board, chat feature, calendar, testing and grade book offer additional opportunities for student-to-student collaboration and instructor/student communication.

Technical Issues include: designing multimedia content, available technology and bandwidth.

Training needs include advanced instruction in web-authoring tools such as Flash, encouraging collaboration and communication between students, and advanced facilitation skills for faculty.

Stage 5 may be identified as an "online conversion" development stage. Faculty members have been using a course management system and are preparing for conversion of the course to an online or web-based environment.

Training and Resource Development Recommendations

- Dedicated print resources on reserve for distance learning faculty
- Distance Learning website pages with electronic resources for faculty at each development stage
- Faculty In-service meetings, workshops, and individualized training in the Faculty Development Center
- Course and Communication development checklists and standards for faculty
- Various course templates, including a syllabus, office schedule, and homepage
- Course Management System "practice courses" for faculty engaged in course development
- Peer Review Teams for course evaluation and coaching

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Geographic Information Systems and the Global Positioning System: Involving Students in the Formation and Testing of Hypotheses

By: Mark Abolins

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Workshop :: Level: Intermediate

Proceeding

ABSTRACT

During the last two decades, the geographic information system (GIS) has been used in many social science (e.g., Lemberg, 1999; Mennecke, 2000; Peterson, 2000) and natural science (e.g., Alibrandi, 1998; Lee et al., 1999; Hall-Wallace and McAuliffe, 2002) courses. Although GIS is often used for visual communication (e.g., Abolins, 1997; McWilliams, 1998), it also supports problem-solving through analytical capabilities (e.g., Clarke, 1995). Since problem-solving is a key component in many definitions of critical thinking (e.g., Halpern, 1984), GIS can support the critical thinking objectives central to many college courses. This extended abstract presents a model for the use of GIS in critical thinking activities, and outlines two activities based on this model. A social science activity examines population growth, and a natural science activity examines land cover. Teams including both GIS expertise and disciplinary knowledge could use the model to develop their own discipline-specific activities.

THE MODEL

In hypothetico-deductive problem-solving, the student uses observations to form and test hypotheses (e.g., Popper, 1959; Hempel, 1966). Maps can play a central role in hypothetico-deductive investigations because they can depict observations (e.g., the populations of Middle Tennessee census areas in 1990) and predictions deduced from a hypothesis (e.g., the possible future populations of these areas). The comparison of different observation maps can reveal spatial relationships, leading to the formation of hypotheses. Hypotheses are tested by comparing prediction maps with observation maps, revealing the presence or absence of spatial relationships. By manipulating maps, students can use the hypothetico-deductive method to solve problems.

For example, consider the social science problem of population growth south of Nashville, Tennessee. In this area, the populations of two counties grew at a rate exceeded by few others nationwide between 1990 and 2000, stimulating interest in growth by government, businesspeople, residents, and academics (e.g., Pollard and Appleyard, 2001). All parties would like to predict where future growth might happen if current trends continue. The comparison of maps can help the student form hypotheses about growth. For example, comparison of a 1990 population map with an interstate highway map shows that the suburban population is concentrated along interstate highways, suggesting the hypothesis that much growth happens near these highways. This hypothesis is tested for the interval 1990-2000 by comparing the interstate highway map with a population growth map. The test reveals the explanatory power of the hypothesis as well as its limitations.

Many natural science investigations follow the hypothetico-deductive model. For example, suppose a student concerned about the influence of land cover on water quality wants to estimate the area covered by open space, parking lots, and buildings within a watershed. To solve this problem, the student can observe randomly-selected locations on an aerial photograph. By comparing the aerial photograph with a U.S. Geological Survey quadrangle map, the student can form hypotheses about the kinds of land cover at these locations. To test these hypotheses, the student can use a global positioning system (GPS) receiver to find each of these locations in the real world, travel to them, and observe actual land cover. Through this problem-solving process, the student can rapidly estimate the amount of land cover in a large watershed without expending great effort.

IMPLEMENTING THE EXAMPLE ACTIVITIES IN ANY CLASSROOM

Instructors can implement the example activities with a variety of computer resources. Those wishing to use simple GIS software can download the freeware ArcExplorer viewer from http://www.esri.com/software/arcexplorer/. Although ArcExplorer is only available for the PC and Sun computers, several Macintosh GIS solutions are listed at http://www.tenlinks.com/MapGIS/products/mac.HTM. For classrooms with web access, the activities are available as a slide show at http://www.mtsu.edu/~mabolins/itconf2002.htm, allowing the student to compare maps by flipping between slides. Instructors with limited access to computers can download the activities from the preceding URL and print them. Printed maps can be reproduced as transparencies, allowing students to compare maps by overlaying them manually. The resources listed in this paragraph allow students to think critically with maps in almost any classroom setting.

CREATING RICHER ACTIVITIES

Professional GIS software has many additional analytical capabilities, providing richer opportunities for hypothesis formation and testing. In particular, most professional GIS software supports the *quantitative* analysis of spatial relationships in addition to the *visual* analysis outlined in this abstract. Several rich critical thinking activities have been developed with professional GIS software, and disseminated through multi-day workshops. A prime example was the "GIS for Teachers II: Integrating Critical Thinking with Spatial Analysis" workshop at the University of Connecticut in 1996. Materials from this workshop are available for download at http://www.canr.uconn.edu/nrme/leris/projects/GISThome.htm. Other critical thinking activities are described at a web site maintained by Lisa Keys Mathews at the University of Northern Alabama (http://www2.una.edu/geography/Active/). These sources provide material for instructors who have the time and resources to go beyond the simple activities outlined in this abstract.

Although professional GIS software facilitates rich critical thinking activities, these activities require more GIS expertise and computer resources, and the development of original advanced activities may require a partnership with a GIS laboratory. Non-GIS-specialists developing and/or using such activities may also find formal coursework or extended workshops helpful. Instruction in GIS is offered by many higher education institutions and private companies, and is also available in self-study formats. To learn more about GIS learning opportunities, visit the Environmental Systems Research Institute (ESRI) web site: http://www.esri.com/training/.

SUMMARY

This extended abstract described a hypothetico-deductive model for the use of maps in critical thinking activities, and outlined two examples based on this model. Model activities support the critical thinking objectives of many natural and social science courses. The activities can be implemented with a range of computer and human resources, facilitating their use in almost any technological setting. Activity materials are available at http://www.mtsu.edu/~mabolins/itconf2002.htm. Instructors seeking to develop richer critical thinking activities with more sophisticated GIS software might consider a partnership with a GIS laboratory.

NOTE: Mention of proprietary software and private companies is strictly for the convenience of the reader. No endorsement is expressed or implied. Many different software packages and private companies provide excellent GIS solutions.

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It Takes a Village: Considerations for Effective Mentoring Relationships in Technology

By: Barbara Beauchamp, Rebecca Burleson, Steve Cockerham

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

Integrating instructional technology into educational practices involves manifesting and sustaining a culture. A process of socialization intercedes to bring about the assimilation of these novel educational approaches. Mentoring relationships are essential in fulfilling organizational objectives related teaching in the 21st century. Ways of establishing and operating these interactions are exemplified along with a phenomenological reflection of the experiential aspects of mentoring instructional technology.

PROCEEDING

Images that convey the qualities of community more adequately describe the inter-relationships characterized by computer technology in learning environments. The village conjures a set of patterns in human arrangements within a context of developing societal configurations. Analogously, the present stage of instructional technology compares to anthropological connotation as well as offers the necessity of community to support IT as an element of educational practice. The complexity of interactions and individuals is dramatically expanding and transforming the nature of this particular culture.

Where once was a wilderness of teachers and students, isolated in their classrooms, has entered an entire group of people that has electronically connected a vast and powerful communication network, hearkening to the major social impact of a significant technological advance. That input has altered the previous patterns of human relationships into "quicker, closer, and smaller" groupings of humans from mere family units living in a territory to tribal communities organized more like villages. The archaeology of instructional technology recognizes the evolutionary moment of the personal computer. Almost like gaining a new sense or cognitive ability, individuals communicate qualitatively more efficiently and access comparatively tremendous increments of information. The global village is indicated by electronic addresses and bookmarks. Its artifacts are online and the paths thru the villages are ridden with email, profuse with chats and websites along the way.

This narrative is an ethnography of a culture that is being discovered more for its current rather than past history. These data have been gathered naturalistically from participant observation with the ethnographers as members of the study. The bias is obvious yet the depth of the elucidation is also reasonably apparent. The field notes are extensive (much downloadable) and corroborated by similar documentation in learning communities now the world over. The following section presents a particularly evolutionary perspective, fueled by culture conflict and assimilation. The remaining segments examine the mentoring or supportive elements within this culture as a case study of structural and functional aspects of this new electronic culture as emerging in higher education.

Cultures change more radically when undergoing some kind of conflict. Framing the revolution of instructional technology in those terms can capture the thoughts and feelings of some who are in the midst of the conquest and resisting its infusion. It can be said the academic community is being overrun by instructional technology with campaigns of online course attack, multimedia massacres, and web page pogroms. Marauding by email has been extensive with massive onslaughts of comments coming from everywhere and masquerading as junk mail. Viruses and poisonous worms are being spread which cripple equipment and industry. Widespread panic has been sewn regarding the rights of intellectual property. Fears abound as questions are raised, "Will one day all faculty be replaced by three dimensional holograms and satellite interactive communication?" and murmurs respond, "Resistance is futile…you will be assimilated."

Libraries are being built yet no one might go there physically any more. Electronic portfolios have opened windows into areas once private. Papers get sent online and who know who wrote them. Exams are taken by those suspected as professional test-takers. Who will need the buildings of campus anymore except as repositories of computer equipment? Those very hallways and offices are presently being infiltrated with technicians who speak a different dialect filled with new terms and meanings from combinations of the old words into almost another language. Tremendous amounts of resources are being diverted, aided by the hidden taxation of technology fees.

The process of assimilation is being implemented thru massive promotion by the computer industry, putting corporate power into traditional educational systems far beyond the textbook publisher. The rapidity of this enculturation is transformational and accelerating, having begun just a few years ago and now reaching global parameters. With geometric progression, the concepts of the 1980's became a physical force in the 1990's, invading the college campus with exponential growth and epidemic proportion. A new cultural identity is formulating and the golden bough is becoming an electroplated chip.

The village under study here is deemed East Tennessee State University. The ethnographic summarization focuses now on the experiences of a faculty member who has been assimilated into this brave new world and currently assists others into homo sapiens technologo. It will be scripted as a story, one unique in particularity yet commonly reminiscent of many in higher ed's virtual reality.

I was born a too small child, one who would have died if not for technology. My young life was paralleled by the early childhood development of electronics, hearing radios with transistors and watching television while gadgets proliferated in the home and business. Trains, planes, and automobiles expanded my universe while moving upwardly mobile. Pictures were taken, even those that moved, while dancing to the sounds of bands, not live but in stereos. Science fiction introduced the imaginable, and then somehow the alien became real. The concept of computerization was formed, as fundamental as on and off yet remarkably able to transcend the illusory boundary of the binary and generate an expansion of human function comparable to animal domestication or even fire. Now I'm perched on the precipice of a new era, inextricably marching in a technological world while sometimes wondering how long humanity will survive.

I remember hearing about personal computers back in the 80's. I figured purchasing one would be a great way to learn how to use one. Soon I learned that it only did what could be done by other means so I settled into using it the only way I needed – to type. Email and the www. were but distant storms on the horizon. Blackboard and smartboards were not even trademarked. Educational use of the computer was limited to the same place as videotapes and there has been no future in correspondence courses. Then came the Internet.

And it really hit me. I was even going thru my second computer, upgrading from the 8088 to the 486, and yet knew nothing of this new e-world. As a glorified typewriter and a fast calculator, the PC did not change my professional lifestyle that much. Not until instructional technology came to the ivory tower along with email/internet did the way of life for faculty make its cultural change. It has now happened. There will be continued development and even some future stages of technological facilitation, e.g., the days of Star Trek may arrive, but there has occurred the critical mass necessary to merge life at the university with technology. We cannot go back now unless there is an immense, global catastrophe of economic, political, or ecological significance.

Just like myself, there have been computers in college for some time, PC's (MAC) for word processing and mainframes for data processing and programming. The stage was set for the invasion. Distance Ed was the entry point, facilitated by insiders, also called early adopters, and then came the climactic waves of instructional technology and academic technology services. Several new branches of organizational charting protruded and the world changed.

ETSU initiated a strategic plan for goals related to instructional technology. Rooms all over campus were upgraded with computers for students. A help line for technical services for students and faculty became operational. Extra technical personnel were hired and placed throughout the campus to provide service. External contracts were signed for specialized instructional technology personnel. Training schedules were set up to train faculty and courses were expanded for students. A few classrooms had been set up for multimedia purposes. These were upgraded while every classroom was retrofit for Internet access. Some multimedia classrooms were designed with smartboards, presentation equipment including document projection, DVD, videotape as well as wireless and touch controls.

So how do you get faculty to buy into all this? There were a few early adopters who had built some courses and a lot of faculty were using their email and the web, quickly becoming accepted and utilized by all but a small number of Luddites. But there needed a broad based stimulus, a peer influence that built support within academic departments. Academic Technology Services, a unit of the Office of Instructional Technology spearheaded a creative approach. They designed a graduate class, actually a 2 consecutive semester series of courses, named Faculty Technology Leadership I and II. Three doctoral level faculty taught as a team and were assisted by several technical instructors with guest speakers rotating their specialized expertise. A notable feature was the regular appearance of an IT expert who was brought electronically with full audio/video synchronous participation. She coordinated discussions and "hands-on" projects from a computer screen.

The faculty members, i.e., students, were selected as a cross section from colleges and departments throughout the university. I was fascinated that this group of individuals who had terminal degrees was willing to accept a situation where they were required to write papers, take exams, and complete projects. Attendance was to be monitored and participation factored in to receiving a grade. Perhaps the reinforcement provided by trips and equipment was a factor. We were able to go to conferences as well as have, for our very own use, a laptop.

The course had a dual purpose, to learn instructional technology and to generate projects that would facilitate the use of instructional design within academic units. Lectures and discussions focused on instructional processes facilitated by technology and ways to mentor this enhancement of educational delivery. Experiential sessions trained software skills related to web page design, course management systems, and course editing as well as multimedia functions and presentation/scanning equipment. Faculty engaged in group and individual projects, designed to further independent and college level goals.

The faculty projects were outstanding. A biologist collaborated with an advanced graphics design team to create a lifelike interactive digital video of molecular processes. An anthropologist created a teaching website that highlighted the "Gray Fossil" archaeological discovery. A librarian developed a tutorial for the library's online card catalog and electronic databases. A business professor designed core competencies assessment for incoming MBA students. An interior designer taught students to use electronic portfolios to showcase their design projects, and a psychologist put a journal online. The next cohort of FTL II faculty is completing the next generation of even bigger projects.

One of the more significant benefits of the FTL course has been its collegiality. By introducing the dynamics of a college course, the faculty members were enabled to relate like students. These individuals had taught classes all week and, on Friday afternoons, gathered as once were their charges, becoming then so similar to what they decried as teachers. They would complain about the instructors going too fast, making them do too much homework (especially considering all the other stuff we students have to do), being late or absent noticeably, waiting until the last minute to turn in assignments, criticizing the course content and teaching methods and developing mutual support for a spokesperson for change. The roles can shift so easily sometimes and often without conscious awareness.

But this does pull a group together and permit cohesiveness, a sense of solidarity. Periodically the class would meet at a local establishment for refreshments and conversation. When discussions were directed toward how to continue the collegiality after the end of the course sequence, the decision was made for a more formal group entitled, the Faculty Technology Leadership Association. Officers were elected and since then the group gets together about twice per semester at a local establishment for refreshments and conversation, sharing ideas and practices while renewing friendships and staying abreast of people's lives.

The course sequence has continued, finishing FTL II in a few weeks and currently setting up for FTL III. Meanwhile, the university has started another initiative related to IT. Called the Faculty Mentoring Center, a large area available in an unused area was converted into cubicles, offices, presentation area, and service facilities filled with computers and presentation/editing equipment. Staffed by a coordinator and assisted by faculty mentors with talent infusing their courses with technology. They are given reduced course loads in response to this contribution. The FMC Coordinator arranges regularly scheduled informal sessions over lunch and refreshments to share activities and perspectives while also setting up workshops for training faculty in various design approaches to online course development.

The university has sponsored a teaching and learning center that is directed by a faculty member with administrative appointment. A number of mentoring and learning opportunities abound yet there is also a strong emphasis on instructional technology. Workshops are also regularly scheduled there to instruct skills and provide support. The current director was previously an instructor for the FTL course and is acknowledged an early adopter of technology at this campus. The previous director was instrumental in approving FTL and attended many classes herself.

Because of the significance of instructional technology to education, there is a special focus on this within the ETSU College of Education. A college-wide committee was established and chaired by OIT staff member who administers instructional technology for the college. Known as a very active committee, there are several subcommittees that focus on technology integration, equipment, and other issues. There are several computer labs, three multimedia rooms, and mobile cabinets that contain computer and presentation equipment.

The COE also has received a rather large grant from Kellogg that supports technology training and services termed "Preparing Today's Teachers for Tomorrow" or "PT3". A variety of activities are supported with a major thrust to technically train local educators in rural areas. For the university several advantages for faculty mentoring were noted. The grant allowed stipends for attending training to integrate technology into their courses, specifically for a syllabus revision. Attendance to conferences for presentation of research was facilitated. In addition, funding was available for an Educational Technology Review Center, which collects, evaluates and stores educational software and digital equipment like cameras and presentation equipment.

Instructional Technology is a partnership between ETSU and COLLEGIS, a relationship that has had its own detractors and proponents. Logic and necessity support some type of interaction with business and industry but politics are alive and well in a university environment. The university is paying faculty the equivalent of $1800 for preparation of an online course and the assurance it will be taught at least 3 times in the next 3 years. Collaboration is established with the Regent's Online Degree, several bachelor degrees that can be obtained entirely online and can be taken at any universities within the Tennessee Board of Regents.

And here I sit…in front of the computer, grading exams on Bb, reading papers from my laptop and writing this one, going back and forth online to email and check references or information. Luckily I've got a nice view. It's a great place to write. Now, if I could just put up a camera with some excellent audio and pipe in my real image, ideally holographically with the whole class perceptibly experiential, we'd really be getting somewhere. You know, maybe it wouldn't be so bad. We could create the ideal set of teachers as holograms…then we could settle down and actually get some research done!

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Performance-Based Assessment in Teacher Preparation Using A Web-Based System

By: Debbie Barnes, Jane Mchaney, Aaron Thomason

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: Beginner

Proceeding

ABSTRACT

The College of Education at the University of Central Arkansas has a professional responsibility to ensure that its programs and graduates are of the highest quality. Meeting this responsibility requires using information technologies in the systematic gathering and evaluation of information and making use of that information to strengthen the unit and its programs. This paper describes the unit assessment plan at UCA and how the plan incorporates the use of a web-based system.

Using a Web-Based System

The College of Education has a professional responsibility to ensure that its programs and graduates are of the highest quality. Meeting this responsibility requires using information technologies in the systematic gathering and evaluation of information and making use of that information to strengthen the unit and its programs. The unit and its programs are informed by an assessment system that examines the (1) alignment of instruction and curriculum with professional, state, and institutional standards; (2) efficacy of courses, field experiences, and programs, and (3) candidates' attainment of content knowledge and demonstration of teaching that leads to student learning.

In 2000, the NCATE board ratified a new performance-based accreditation system and standards. With the advent of performance-based accreditation, teacher candidates are expected to show mastery of the content knowledge in their fields and to demonstrate that they can teach it effectively. Standard one moves candidate knowledge and skill to the forefront. Specialty professional associations play a crucial role in accreditation now, as their subject matter standards are the focus for program design and delivery in professionally accredited institutions. Institutions are expected to meet the standards of the specialty associations.

In addition, the College of Education must have a system in place to assess candidates. The system must include assessments at entry, throughout the program, and upon exit. As institutions develop better assessments of candidate performance, they are also expected to establish rubrics for acceptable versus unacceptable performance levels. Institutions must provide evidence that candidates who are completing their preparation have performed at acceptable levels.

Candidates know the criteria by which their competence will be evaluated. Multiple and longitudinal assessments of candidates help the college form an assessment of candidate readiness to teach. The move to direct evidence of teacher proficiency, through examinations, on-demand tasks, and longitudinal assessment of performance, is one of the changes emphasized in the new 2000 NCATE standards. This shift to performance-oriented standards is just beginning to impact teacher preparation institutions, and this paper describes how one institution is implementing these changes.

The College of Education/Professional Education Unit (PEU) Assessment Plan was developed to provide systematic and continuous documentation and evidence of candidate performance in areas of initial and advanced licensure. Due to the size and complexity of the "unit", this plan relies, in part, on candidate performance assessment plans embedded in each program area. We focused our efforts on using multiple indicators of candidate performance over time, which will provide reliable and valid indicators of future performance.

The creation of our Unit Assessment Plan was predominately completed by the Professional Education Unit's Accreditation Standing Committees. The members of these committees include UCA faculty from five colleges across campus that have education programs. As decisions about the Assessment Plan needed to be reached, the committee presented their ideas to the Professional Education Unit made up of UCA faculty and members of the professional community. A key to a having an effective unit assessment plan is the routine maintenance of documentation that describes the activities of the unit. The system at UCA is being set up to ensure routine documentation (e.g. candidate assessment data, candidate records, faculty vitae, program approval information, faculty publications, field experience data, diversity data, budget information, etc.) is being collected, organized and accessible. One of the first electronic systems to be developed was the on-line vita program. This program allows faculty to input information from their offices into an on-line vita program. The program is designed to include different fields of information (e.g. educational preparation, teaching loads, advisement loads, publications, scholarly activities, professional development activities, etc.) Faculty are able to keep their vita information current from semester to semester and the unit is able to access this information and generate reports and other useful information for assessment and evaluation purposes. This program allows faculty to print copies of their vita in APA format.

Faculty members involved in the preparation of professional educators, as well as professional education candidates, public school representatives and members of the community share a vision for the Professional Education Unit at the University of Central Arkansas (UCA). This vision is one of preparing Educators as Reflective Decision Makers. This framework reflects the standards of the Arkansas Department of Education, U.S. Department of Education, and numerous nationally recognized professional organizations. For example, one of the major assessment methods for teacher candidates is the "UCA Teacher Performance Outcomes Assessment". This instrument was modeled after the Pathwise system and the PRAXIS III domains, which are correlated with the Arkansas Department of Education Principles for Licensure of Beginning Teachers.

A year ago the College of Education had a web server and a few databases. The databases were not aligned with a unit assessment plan and did not allow shared access. We knew we needed a database that would handle large amounts of text, allow for user friendly forms, allow access from the web, and accommodate the current data. The College of Education currently is piloting the first phase of a web-based system to monitor and track candidates and assess program effectiveness. What are the tools to make this happen? The current system utilizes the following: Microsoft Windows 2000 Server, server hardware, Internet Information Server with FTP, WWW and SMTP services, Microsoft SQL 2000 Server, ASP Mail 4.0, Crystal Reports 8.5 Developer Edition, Visual Studio Enterprise Edition and a very knowledgeable technology specialist.

How do you coordinate this process? First, you need to identify what you want to know. The members of the Accreditation Standing Committees assisted in this effort by aligning the data needed by examining the standards that the unit assessment plan is based upon. The Professional Education Unit currently uses the Microsoft SQL server to house data related to candidates and unit functioning. Students, faculty members and personnel in UCA's Office of Candidate Services and Field Experience input data into this system using the computers in this office. Spring 2002 was the first semester that students actually began to use the on-line system to apply for admission to the teacher preparation program. Data are retrieved from the database by Program Coordinators, Department Chairs and the Dean of the College of Education. In the future the Office of Candidate Services and Field Experience will provide individual and aggregate data to the departments and programs to assist with their annual reviews.

Data are collected from multiple internal and external sources. For example, potential candidates complete their application information, professors grade students in classes, field-based supervisors provide ratings of candidate performance, ETS provides PRAXIS test results, etc. Various evidences are collected to assess candidate performance before entry into the program, as they continue through the program, before graduation and post-graduation. By combining these data elements we are able to create a comprehensive picture of our candidates within programs, within the College and in comparison to other candidates in the state. Furthermore, these data are collected throughout the candidate's enrollment which provides both formative and summative assessment information. Undergraduate and graduate programs within the Professional Education Unit differ according to their structure, timelines, and content therefore, the data collected for graduate programs will not be the same as for the undergraduate programs and will require separate fields in the database.

UCA candidates in undergraduate programs are assessed formally at three different points during their academic program. The first point is during the admission process to determine if the candidate has the knowledge, skills and dispositions to be admitted to the program. The second point is referred to as Level 1, defined as the period from candidate induction into a program to the completion of practicum experiences. The third point is Level 2, also known as the Internship experience. Data are collected during each of the three points of a candidate's progression in the program. These data are reviewed by the faculty members in the candidate's program area and are used as the basis for determining if the candidate's level of performance was sufficient to move him/her to the next level in the program. These decisions are documented by departmental faculty. Once the PEU has collected data on candidates from the time of admission to the time of graduation, studies will be conducted to determine statistically how decisions made at the various points in the program are related to candidate success.

Standards I and II Accreditation Standing Committee members are responsible for summarizing and analyzing data according to a pre-determined schedule. This schedule was created by the committee members and approved by the PEU membership. Some data, such as diversity information on candidates, faculty, and field supervisors, are collected and summarized semi-annually. Other data, such as post-graduate surveys, are collected on an annual basis. At anytime, a program coordinator may request specific information about his/her program to use for program improvement or accreditation purposes. This committee is also responsible for providing PEU-wide and department specific reports to all Program Directors within the PEU and PEU subcommittee chairs every academic year. Such reports include the data collected during the academic year.

We are working on creating an infrastructure that will support both the assessment process required by NCATE and the assessment process required by state and institutional demands. We are examining the need for further and/or differentiated staffing at the program/department level to support candidate assessment data collection and analysis as well as creating an Office of Educational Assessment and Evaluation to provide more integration among services. We are also concerned about the consistency of feedback to the programs and the scope of participation in program area discussions on interpretations and applications of the data. The University is in the early stages of developing a systematic and continuous data management system and establishing a more adequate infrastructure to support the assessment and evaluation tasks and institutional research. One major advancement at the University has been the establishment of an active Professional Education Unit to assure the consistency of assessment among the programs in other units outside of the College of Education with regard to candidate and program assessment. This effort allows us to address issues related to candidate performance in the Colleges of Fine Arts, Liberal Arts, Health and Applied Sciences and Natural Sciences and Mathematics.

It is too early to know the depth of difference standards have made in the preparation of teachers and other school personnel. The beginning of this era of standards-based, performance-based teacher education is an ideal time to collect some baseline data about what candidates know and are able to do today. This is why our Unit Assessment Plan is so critical. The serious undertaking of performance assessment related to standards will provide data for continued improvement of our programs to ensure the preparation of the teachers we want in today's schools.

Seventh Annual
Mid-South Instructional Technology Conference
Teaching, Learning, & Technology
The Connected Classroom
April 7-9, 2002

Problems and Solutions for Teaching Technology Online

By: Joel Hausler, Jay Sanders

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

One of the major problems areas for online classes is student cheating – copying other student's work. Some courses have been taught online for 4 years or more. Many of the students who have completed courses kept their digital assignments and passed them on to other students. The other problem areas, as identified by MTSU online instructors are lack of student computer skills, lack of student motivation to do work on their own, lack of student/instructor interaction, increased workload for online instructors, and problems with student's internet providers. This paper discusses these problems and the MTSU instructor's methods of solving these problems.

The Study

Recently, we conducted an online discussion with all the MTSU's online instructors and asked them to report the problems that are unique to online classes and how they solved them. The following is a summary of the responses from the online instructors. The online instructors were not asked about the positive attributes of their online classes as this topic will be addressed at another time.

Problems:

Cheating – copying other student's work. Who is doing the work? How can we verify?

1. Changing assignments each semester
2. Keeping previous student's work (on hard drive for comparison)
3. Required attendance at Performance test – end of semester
4. In upper division, make student so detailed that no one can convince another student to do the work.
5. Use multiple forms of assessment – 1) online timed test, 2) mini-essays, 3) individual research projects
6. Use discussion boards with students required to respond to instructor's questions, as well as other student's responses.
7. Make online student work more application oriented where they have to apply the information learned to a specific problem(s).
8. Use honor code where students pledge that they did not cheat on the assignment.

Students not capable of handling online mode. (Lack of technology skills)

1. Use screening tool (online application)
2. Provide extra help in person & online one-to-one
3. Transfer student to on-ground class
4. Have students demonstrate their computer skills by doing a small project prior to letting them register for online class
5. Have university offer more student training on WEBCT prior to signing up for online classes.

Lack of student motivation to complete online work

1. Publish a deadline for all student assignments & give a penalty after a grace period.
2. Use a time frame of 1 – 48 hours for student to sign on & discuss the problems posed.

Students do not get interaction with other students/instructor:

1. Online chat for group assignments
2. Online chat for every student to respond to instructor question(s) i. Student must respond to another student's response to question
3. Student/instructor communications are greater than with on-ground class
4. Take & publish on website the student's & instructor's picture
5. Some instructors report getting to know the "quiet" students better than they normally do in a regular on-ground class.

Workload for instructor is much greater & not understood by others:

1. Workload for technology courses is up twice as much, or more work for the instructor
2. Maintaining a website (especially for technology course) is a demanding & time consuming process. When we change versions

of software, then almost all the instructions must be changed.

3. Other instructors view online classes as smaller & much less work than on-ground class
4. Other instructors are suspicious of online classes & instructors, therefore, they do not support them.
5. Online office hours must be kept in addition to on-campus office hours.
6. Being the online contact person for the student, the instructors do more advising of other faculty member's students.
7. Administration want more online classes, but is not willing to provide adequate support for the online instructors in the following areas:

i. Heavier workload is not considered & is just more work for the same pay.

ii. Payment for setting up online is inadequate for the time spent

iii. As computer-people we are expected to help everyone else in the department with their computer-related problems. Many times it the person's lack of computer skills or lack

iv. It has difficult or impossible to get access to our office hard drives from remote locations – many online instructors are online at home or on the road at nights & weekends.

v. Our IT department is understaffed and thereby slows down the response time to get computer-related problems solved.

Problems with Internet Provider:

1. AOL will zip more than 1 file. This is very time consuming on both ends. Usually the student's are required to send 1 attachment with each email.
2. Dropped email somewhere in the system of university & Internet Provider servers. We do not know a solution to this, other than having students & faculty follow-up if there is not response to the original message.

Not all problems, some good things reported:

1. I enjoy teaching on-line as well as on campus. This teaching-learning strategy is excellent for many reasons, however, one of the best reasons is that some students could not attend class(es) if this on-line option were not available.
2. I've also found that the students who stick with the class (and don't drop after a week or two) ask for additional information to supplement textbook and other assigned texts.
3. Even though the online classes are much more work there is such a need

and market for online learning that I think the opportunity provided outweighs the time.

Almost all of the present online instructors enjoy teaching online and are excited about MTSU expanding its online offerings. The Tennessee Board of Regents Online Degree Program that started August 2001 has been a real boost to the increasing the support on our campus for online courses. Note: Feel free to email either of us with your comments or questions about online courses, etc.

Seventh Annual

Mid-South Instructional Technology Conference

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The Connected Classroom

April 7-9, 2002

Producing Industrial Videos in the Classroom

By: David Baird

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

Producing industrial videos in the classroom has proven to be popular with both technology students and local industries. The Industrial and Engineering Technology department at Southeast Missouri State University has employed this approach to teaching Non-linear video editing for the past three years. Video production has focused primarily on safety. But, process and promotional forms have also been produced.

Equipment and software costs coupled with rapidly expanding capabilities of both have made it feasible for schools to teach this technology. It has also become more prevalent in mid sized and small industries. It is being incorporated into the traditional in-plant printing facilities.

Introduction

Cameras, welders, and other more complex pieces of equipment are frequently packaged with information videos. They focus on equipment operation, safety, and invariably a bit of self-promotion. Increasingly, manufacturers are finding it cost effective to include these videos with new equipment. They have found that it reduces the pressure on help lines and almost eliminates the number of functional products returned as defective. Until recently video production was outsourced to a specialty video production company.

Now traditional in plant printing departments are being required to expanded well beyond ink and paper into video production to be delivered on VHS tape, CD, and

DVD. Not long ago video production was beyond the typical in plant printing department. However, with the rapid increase in the capabilities of desktop computers, and software, video production costs have dropped drastically. Many plants now find in house video production a cost effective approach to delivering information to customers. They have also begun to produce videos for use within the production facilities as well. In particular, safety training has benefited from videos produced in the exact environment where employees work.

In house production has expanded from safety to include operational, training, orientation, and promotional videos. Hardware and software required for this type of production have both experienced dramatic price reductions in recent years along with increased capabilities. Thus, making it very cost effective to produce all of these types of instructional and informational videos within the manufacturing environment.

Video for industry is interesting and challenging to the students. Especially, when the final product is for a company that will use it daily in their business. The real (not contrived) connection helps to get the best from the students, who seem to appreciate the outside, corporate, guidance. It also provides them with invaluable industry contacts for potential future employment.

Industrial Connection

For the classroom, the first order of business is to locate industries that are in need of short video productions. For TG472 at Southeast Missouri State University (SEMO) this means final productions in the vicinity of 10 minutes in length. This limit is imposed due to production times and the amount of video storage available on the editors. One minute of video, depending on the compression, takes up about 1 gigabyte of hard drive storage space. Digital audio and music add to this space requirement. Extending this 1 minute = 1 gig requirement and adding audio requirements of as much as 1 gig. per minute, it quickly becomes evident that with 20+ students in each class, mass storage space is at a premium.

Companies that have taken advantage of video production from Southeast's class include; a plastics company, a wood truss manufacturer, a wire company, and an original equipment automotive manufacturer. Currently in production are videos for an electrical power generating plant. Four separate safety videos are being produced during the spring semester for an electrical power generation plant. Also in the works is a promotional video for the Technical Graphics program at SE MO.

Equipment

Non-linear digital video editing equipment is used to import raw footage, still images, animation, music, voiceovers and to create digital effects. Equipment capable of performing all of these tasks varies greatly in capabilities and cost. Matrox and Pinnacle are two major brand names that are readily available. Both are in daily use in the Graphic Technology program at Southeast Missouri State

University.

Two varieties of Pinnacle digital video capture cards are represented in the program. First are 3 RealTime Nitro dual monitor systems. Six additional editors use DV1000 Cards in Silicon Graphics workstations.

Two camcorders and tripods are available for students to capture original video footage and audio for their projects. Both are digital. Each camcorder is equipped with a wireless lapel microphone to capture high quality audio. Increasingly, students come to this class with their own digital camcorders. These consumer grade camcorders will work but are not capable of the high quality video needed for most of the industrial production.

An audio recording/editing studio is used by the students to finetune the audio tracks and record voiceovers. This audio editing is performed with CakeWalk software. After editing, the digital WAV files are accessible through a fiber optic network directly from any of the editing stations.

The Nitro systems run Premier 5.1 while the DV100s use Premier 6 software. Additionally, Adobe Photoshop and Illustrator are loaded on the editors to facilitate the creation of still graphics for inclusion in productions. Character generation for titles is done with either Title Deco, within Premier, or with Illustrator and imported. After Effects is also available for special effects when the students deem necessary or desirable.

Costs

Appendix A lists the complete specifications of each of the editing stations used at Southeast Missouri State University. However, in general, the Nitro systems cost $45,000.00 each, while the DV1000s run approximately $5,000. Keep in mind however, the DV100s are single monitor systems with few peripherals. Even then their prices can be higher than that listed depending on the amount of RAM and Video hard drive space specified. One note of caution, make sure hard drives selected for video storage have fast data transfer rates. Typically, a 10,000 rpm SCSI drives with sustained data transfer rates of 35 meg. per second will be required. If the drive is too slow dropped frames will occur, with the result being unusable video files. The size of the video drive depends on the amount of video capturing and editing to be done. However, it is recommended that the largest size affordable be purchased, with nothing less than 70 gigabytes.

Procedures

Production groups are selected at random from within the class. Depending on the size of the class and the number of industrial projects planned, they include either three or four students each. Each student is expected to perform camera work, audio editing, and video editing as part of their overall industrial assignment.

Early phases of each new class are spent learning camcorder functions and features and the capabilities of the video editors. The editor features are learned in a two- stage process. First, the students are required to complete a tutorial.

Then, they are given an assignment to produce a 5 to 10 minute video of their choice, which must include specified features of the software. The features are: capture digital video; digital audio; include transitions; superimposing; compositing; and applying a filter. Each student must produce this individual assignment related to camcorder operation and video editing prior to any work on the group industrial project. The students are encouraged to have fun with this project and produce something of personal interest. Past productions have run the gambit from sports, to dog training, to a video portfolio, to a spoof of the TV show Cops.

A class in animation is a prerequisite for the TG 472 class. Each student can then have input into the creation of an animated intro for a fictitious video production company. When multiple videos are produced for the same company, each production team creates their own animated introduction and the class votes to select the one to be used in the final videos. Whichever team's animation is selected will have their names included in the credits for all of the videos using it.

Initial arrangements for the number of videos and contact persons for each industry are made by the professor. A group field trip is usually arranged for the class to get acquainted with their assigned industry. However, following this initial introduction, each production group is responsible for making arrangements with their assigned industry to obtain direction for their production. They will either get the script produced by the industry or they will write the script based on the company's wishes. They will also discuss the kinds of video shots desired by the company, things to avoid and things to be sure to include.

After the initial meeting with their assigned industry each production group holds several meetings to determine their approach to the video. Several storyboard versions are normally required before the group can come to consensus. Once the storyboard is complete a meeting is arranged with the industry representative to get feedback for revisions to the approach. The teams then meet to revise the storyboard and determine a production schedule. Raw video footage is then shot as required by the storyboard. Much of this footage, naturally, is on location within the industry. Narration may be recorded at that time depending on the specific video requirements. Background sounds are also recorded during visits to the industry for inclusion in the final project.

In the editing studio, segments of the raw footage are selected for inclusion in the final video and imported into the project. The script for the voice over is then recorded and imported into the project. Background sounds and finally, appropriate background music are selected and downloaded.
After all of the selected components are in the project they are then assembled on the time line in a sequence determined by the storyboard. At this stage, the video is considered a rough cut.

After the rough cut is complete, the industrial representative is contacted for a viewing. Suggestions and concerns are noted and final revisions are made. After the video is in it's final form, copies are made for the industry in their preferred format, either VHS tapes, SVHS tapes or DVD disks. The students also make copies for inclusion in their professional portfolios.

Conclusion

After several years of teaching with this kind of project it has proven to be well worth the extra effort it takes to coordinate with industry. It has proven to provide students with invaluable industry contacts. It has also provided local industries with the opportunity to find out more about our school and department. The school benefits in that it provides continuous contacts with industry to help in staying current with industrial trends.

Appendix A

Pinnacle RealTime NitroEditors
Dual Pentium Zeon 500 processors
76 gigabyte SCSI video drive
140 gigabyte SCSI video drive
750 meg. RAM
Pinnacle Nitro edit/capture card
30 gig. Tape backup
Sony DVD burner
Dual 21" monitors
NTSC monitor
Theater sound speakers
SVHS tape deck

SGI Pinnacle DV1000 stations
Dual Pentium 1gig. processors
Single monitor
DV 1000 edit/capture card
40 gig. hard drive

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The Connected Classroom

April 7-9, 2002

Successful Conversion of a Classroom Program to an Internet Program

By: Cheryl Stotts, Richard Smith, Patricia Edwards-Schafer, Cheryl Schmidt, Jo Ann Smith

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Panel Discussion :: Level: All

Proceeding

ABSTRACT

In 1999, the University of Arkansas for Medical Sciences College of Nursing received a 5-year grant from the U.S. Health Resources and Service Administration, to provide online baccalaureate completion courses for RNs. At the completion of the first year, all theory courses (six) were offered online. Clinical courses are offered at Arkansas Health Education Centers throughout the state to accommodate distant students. Various methods are used for evaluation of clinical experiences. Principles of adult education are emphasized and implemented in all courses. This curriculum is designed to sharpen nurses' critical thinking, provide the conceptual and theoretical basis for professional decision-making, introduce nursing research, and build a foundation for community health nursing. Meetings are held monthly for faculty teaching online to discuss how to manage the electronic classroom. Ongoing, extensive evaluations are a constant thread. Student evaluations have been very positive.

Developing a Successful Online RN to BSN Program

Healthcare experts continue to warn of a shortage of qualified professional nurses. This emerging crisis threatens healthcare delivery in large metropolitan healthcare centers, community hospitals, ambulatory care settings, and rural community health settings. Because Registered Nurses (RNs) are the largest single segment of the healthcare workforce, a shortfall of RNs is sending shockwaves throughout the healthcare industry. Along with the nation, Arkansas is experiencing a shortage of RNs, and in particular, a deficit of baccalaureate-prepared RNs (American Association of Colleges of Nursing, 2001; Arkansas State Board of Nursing, 1998b). This workforce deficit in professional nurses is compounded by the fact that Arkansans have been described as very unhealthy. Compared to other states, Arkansas ranks 42nd in overall healthy behaviors and health status (Arkansas HealthNet News, 2001).

To address this imbalance in the professional nurse workforce in Arkansas, in 1999 the University of Arkansas for Medical Sciences College of Nursing applied for and received a grant from the Health Resources and Services Administration (HRSA) to provide online baccalaureate completion courses for RNs seeking their Bachelors of Science in Nursing (BSN) degree. A distinct advantage of online education is that it increases access to education in remote rural areas for nurses who cannot receive their degrees in a traditional learning environment because of travel concerns and time commitments.

The College of Nursing has partnered with the Arkansas Health Department to allow time for their RN employees (85% of whom do not have BSNs) to enter the program. They provide release time and financial incentives for their staff to attend school, and the college provides community-based clinical experiences suitable to meet their needs. Using four rural Area Health Education Centers (AHECs) and the main health sciences campus in Little Rock, rural RNs and RNs employed by the State Health Department are offered the opportunity to complete their BSN degree and improve their ability to serve and care for the people there. Providing an online BSN degree not only services the workforce need for traditional hospital nursing, but also improves the professional nurse workforce in community, home health, long-term, and ambulatory care.

After meeting admission requirements, nurses seeking their BSN degree are able to enter the RN to BSN program at the senior level and are required to take the course Orientation to Advanced Placement, four clinical based courses (Community Health Nursing, Leadership and Management Nursing, Older Adult Nursing, and Ambulatory Care Nursing), Nursing Research, and Issues in Nursing. These courses provide 26 semester hours of credit, all of which are online. This RN to BSN program is designed to sharpen nurses' critical-thinking skills, provide the conceptual and theoretical basis for professional decision-making, introduce nursing research, and build a foundation for community health nursing. The program uses a flexible, online curriculum that is suited to meet the needs of the rural based RN and the public health nurse while maintaining educational excellence and building clinical expertise.

Program Background

From 1974 to 1999, the College of Nursing faculty made weekly trips to rural areas throughout the state to teach baccalaureate courses and evaluate students' clinical performance using a traditional face-to-face approach in a curriculum that was generally inflexible. This required a major commitment of faculty time for travel, which reduced their availability as an academic resource. In 1993, telecommunications (compressed video) was introduced as a means of offering courses to outreach sites in the AHEC areas. However, this required outreach students to travel to their regional AHEC site for classes on pre-scheduled days and at pre-scheduled times, similar to the traditional classroom approach. Additionally, the demanding class and practicum schedules would often force full-time employed nurses into part-time employment schedules, further compromising the already limited workforce in underserved areas.

The first online undergraduate courses were piloted in spring 1999, some as complete courses to selected RN to BSN students and some as courses partially online to all students in that course.

Current Program

Today all theory courses in the RN- to- BSN curriculum are completely online, and practicum course assignments are managed primarily online. The RN- to-BSN program has doubled its enrollment since the online program began. In the traditional face-to-face program the RN to BSN enrollment rate was approximately 35 students per year. Now the program enrolls approximately 70 students per semester, and the number continues to grow. Implementing an online curriculum has also generated more flexible entry for RNs seeking their degree. They are no longer bound to classes offered in a curriculum with rigid, time -bound, semester blocked offerings that mandate once a year enrollment. Currently, students are offered enrollment for any semester and advised into classes based on their personal degree plan. This flexibility has added to the increased enrollment for the program.

Computer fears and sense of isolation are dealt with early in the program. Computer phobia is decreased through a daylong orientation, in which students are gathered in a computer lab and are taught how to log onto the course that they are taking. The instructor reviews the online syllabus and content with students while answering any questions they may have about the course. Students become more comfortable and less fearful of the online education courses simply by being in the course for a short period of time. However, in the first two weeks, an important strategy for reducing fear is quick, frequent feedback to students. Some faculty even write a personalized letter to students entering their online course to alleviate fears. A sense of isolation is remedied by uploading student pictures to a web page as soon as they register for class. Also providing an online socialization discussion forum area for students promotes student interaction and allows for discussion of topics not directly related to course content, such as how to get books or problems sending attachments. These forums create opportunities for students to get to know each other. As time passes and students become more at ease with the use of technology, their fears dissipate rapidly.

Preparing the Curriculum

To facilitate curriculum development, participating faculty attended a weeklong Summer Institute on Online Education, sponsored by the University of Arkansas for Medical Sciences College of Nursing. This experience provided the skills needed for the development of online courses. The institute included content on models of online education, new technologies and strategies and evaluation of learning. An experienced online educator, assisted by an instructional designer and a software expert, conducted the institute. After the weeklong institute, faculty were given three weeks paid time to develop the online courses with assistance from the institute educators.

One goal of the Institute was to acquaint or re-acquaint participants with the principles of andragogy and adult teaching/learning principles. This generated discussion and creative ideas about how to educate students outside the traditional classroom. Another goal was to teach participants to create documents, which could easily be converted to web pages. The Institute used Front Page for creating new web pages, in preparation for uploading documents into WebCT, one of the several software programs available for implementing online education and the one selected by the College to facilitate online education. Technical support was also available to facilitate facultys' development of online courses. Overall, the Institute provided the foundation for successful implementation of an online curriculum.

Online education is congruent with the framework of adult education. Malcolm Knowles addresses the needs of an adult learner in his 1973 book The Adult Learner: A Neglected Species. He states that adults will be very self-directed in their learning when given the opportunity because they feel a "need" to learn. Online education gives adult learners a chance to be self-directed in the learning process by allowing them to share experiences with other students and faculty, as they apply concepts and data to the topics being discussed. This process of sharing allows the students to go beyond the usual classroom situation where they generally listen to lectures and take notes. Some students are reluctant to speak up in the classroom for fear of saying something wrong and being ridiculed. Some students are shy and will not take the opportunity to discuss. There are also students who like to do more than their share of discussing. In any case, online education provides a means for all types of students to express themselves in a more thoughtful, equitable manner. In the online curriculum students have the time to formulate their thoughts and present content in a way that best suits them. Many digital tools enhance the flexibility of online education, including asynchronous and synchronous discussions, e-mail, web searches, case studies, chat rooms, quizzes, and exams. All of these methods have been implemented in the BSN online education program in the various courses.

Planning the practicum components for four online courses remains a challenge. Because students are already licensed, they may function in the clinical setting as RNs, but they nevertheless require oversight related to the concepts of the courses in which they are enrolled. Additionally, they need the opportunity to critically analyze their clinical application of theory concepts, participate in student conference groups, and have the opportunity to ask and answer questions. Historically, this was managed by a combination of telecommunications, preceptors, and traveling clinical faculty. Instructors made periodic site visits to specific locations throughout the state and clinical conferences were held through telecommunications for all AHECs simultaneously. Students documented clinical experiences and analysis of observations in written logs, which were reviewed at least twice each semester.

A goal for the online practicum component is to satisfy these same requirements using online educational tools. Following are solutions implemented to accomplish this goal:

- AHEC and faculty members select, or assist the students to select, appropriate preceptors in their local areas who meet course requirements as well as college and faculty requirements.
- Orientation for new preceptors to acquaint them with course requirements is delivered via videotaped sessions of the respective course coordinator providing information to the preceptor.
- Written documentation to reflect students' critical thinking and clinical experiences is submitted using WebCT. Feedback for individuals and group questions are managed using various tools within WebCT.

Concerns yet to be addressed about the online practicum include:

- Identifying sufficient numbers of qualified preceptors and clinical sites in rural areas to meet the growing numbers of RNs wishing to enroll in this program from rural areas.
- Expecting the preceptors to provide actual clinical evaluation rather than limiting their participation to input into the course coordinators' final evaluations. Using a tool based on Bondy's 1997 (Bondy, Jenkins, Seymour, Lancaster & Ishee, 1997) research, faculty is attempting to standardize an approach to clinical evaluation that may be used successfully by preceptors. For example, one faculty made a video of a student conducting a community-teaching project. One segment demonstrated the student giving a failing presentation, followed by the student giving an excellent presentation. The instructor shared this video with the other instructors; all preceptors were also sent copies and students were made aware that it was available to them for viewing.
- Clinical conferences that are not dependent on telecommunication. Many faculty are beginning to experiment with bulletin board groups or chat rooms as a solution rather than face-to-face clinical conferences.

Program Evaluation

Evaluation is fundamental to the instructional and curriculum design process. To facilitate evaluation, an instructional designer served as part of the evaluation process for courses offered. This designer assisted faculty in designing and developing their online courses. The designer evaluated each course throughout the semester and advised on revisions as needed. Additionally, an evaluation specialist oversaw data collection and analysis for each course. Formative and summative data were collected and analyzed, including student comments regarding faculty and course content.

Student evaluations have been very positive. One outcome of the evaluations indicated that students truly appreciated the opportunity to continue their education via the Internet. Most found the course content helpful and relevant to their clinical practices. Students also felt that they could give suggestions for

course improvement without retribution. Faculty have used student comments to make appropriate changes in the courses.
Each semester, students evaluate each course and faculty teaching the courses. Faculty also provide peer evaluations, and consult an evaluation specialist when needed. The curriculum committee reviews the courses and the associate dean of the undergraduate program reviews all evaluations.

Successful online instruction demands frequent evaluations by experienced educators. These evaluations are considered essential for decreasing online course attrition rates. At first, biweekly meetings were held for faculty teaching online courses to discuss innovative and creative ways to enhance the courses being offered. These meetings are now being offered monthly. Effective course development and management is essential for successful program development. Sharing of experiences, positive and not so positive, are ways of improving course delivery.

Because of intensive formal training given to faculty before teaching their first online course, the new online curriculum has been very successful. Faculty were freed from their teaching commitments for one month in the summer and were able to devote full time to development of their online course. It is essential for faculty to have instructional design support and administrative support to have effective online courses. In order to sustain the program, all new online instructors should have formal training and effective mentoring from those who have previously taught online courses. Because of the increasing investment in online teaching, it is essential that everyone involved work closely together to see that the program continues to be successful. So far every effort has been made to accomplish this through continuing education, keeping software and training up-to-date and continued support from administration. The partnership of faculty, technical support, and administration is the vital tool that will keep the program growing and user friendly.

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Using Blackboard to Survey Students at Midterm

By: Donna Austin, John Austin

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

Increased attention on the quality of teaching has meant an increase in the use of student surveys as a measure of perceived teaching quality. Many student surveys, which typically take the form of teacher and course evaluations, are conducted at the end of a school term and are more summative in nature. Results are given to the instructor after the class is concluded making it impossible to incorporate feedback into the current course. We will share how we used the anonymous survey feature in Blackboard to survey our students at midterm in order to allow our teachers to collect formative feedback and to make crucial changes if indicated.

Introduction

The ultimate purpose of any student evaluation of teaching is the improvement of teaching, and implicit in that is the improvement of student learning (Ballantyne, 1997). While the literature on student evaluation of teaching is constantly growing, it usually focuses on the instruments used, with very little about the mode used to administer the survey. At Louisiana State University in Shreveport, a mid-term survey for students was introduced as an option to help instructors make necessary changes in their classroom practices during that same semester. While our faculty feel student surveys conducted at the end of the term are extremely important, many voiced this concern: What can I be doing "now" to improve my teaching and my student's learning? Another problem with end-of-term surveys is that sometimes the most recent impressions are the most vivid for students so they might not be reflecting on the whole semester when completing such a survey. This is another reason to introduce a mid-term survey—to find out about a wider spectrum of the semester rather than only the end of the term.

Before we came up with this idea of using Blackboard's survey feature to conduct mid-term surveys, faculty members had no structured feedback mechanism with which to make changes in their teaching style. The results from our end-of-semester surveys (Student Instructional Report-II) are not returned until at least a month into the following semester. Additionally, these surveys are only administered in the fall for tenured faculty members unless the faculty members request that their students be surveyed in the spring as well.

Review and Background

The literature that has been published on student evaluations of teaching is vast and many works give detailed reviews of what has been covered (Cashin, 1990; Centra, 1993; Ramsden, 1992). A review of the literature indicates many articles in this genre are generally concerned with how feedback is given to faculty (Brinko, 1993) how faculty deal with it (Busuttil, 1995) or how useful it is (Marsh & Roche, 1994). Most studies consider particular aspects - reliability and validity of questionnaires, biases that might occur, etc. It is not the focus of this paper to examine these areas, other than to note that the consensus of opinion is that student ratings are generally valid, reliable and free of bias (Ballentyne, 1997). Evaluation is generally the last step during the semester process. According to Ballentyne (1997), few studies look at what happens after the evaluation as far as reporting the results to the students. A prerequisite condition for teachers to make improvements to their teaching as a result of student feedback is that they consider student opinion worth listening too. Respect, care for students, and listening to what they have to say on teaching and other issues are considered fundamental aspects of good teaching (Brookfield, 1986; Centra, 1993; Greene, 1973; Taylor, 1995; Vella, 1994).

In fall 2001 we constructed a 28-question survey whose content we will discuss next. The survey questions were typed into Blackboard using the Pool Manager so that it could be put into an exportable format, which is a zipped file, enabling it to be used by any faculty member who chose to participate. We had two hands-on workshops in February 2002 so that faculty could actually import the survey into their Blackboard classes. A detailed instruction sheet (See Appendix-I) was provided at the workshop as well as an instructor to help with each step. We worked through the various steps of importing the zipped file into the various Blackboard classes. The next step was to use the Assessment Manager to modify the survey and make it available for students. During this step, faculty members could add, change or delete questions from the survey. They could also use it just like it was originally designed.

Eighteen faculty members attended the two workshops in February. This is about 13% of our full-time faculty. Only 8 instructors (6%) have actually administered the survey in their classes at this point. Four more say they are going to administer it soon, and we presume six are not going to administer it. All of the instructors who have given the survey have said they will give or have given feedback to their students about the pedagogical decisions they took or will be taking as a result of feedback received from the survey. Ramsden & Dodds (1989) suggest communicating with students on changes that have been made so that students complete future surveys seriously. While providing this information to students may reinforce their views of the importance of the surveys, this study addresses the mode used to administer the surveys, the ease of importing the survey and whether or not the instructor receives helpful information. The main issue for the instructors is that this mid-term survey provides evidence of the instructor's concern for students by surveying them when changes can still be made in their classrooms.

The Survey Creation

We created the 28-question survey (See Appendix II) by combining various survey questions found on the web (e.g., Murdoch University Student Surveys of Teaching questions - http://cleo.murdoch.edu.au/evaluation/survey/teachdraft.html), along with some questions from Northwestern State University's online course evaluation, and one question that pertains to a faculty member's use of Blackboard. There is one open-ended question at the end where students can make comments that relate to teaching and learning and the faculty member in general. The student is warned to avoid comments that are personal, sexist or racist. The student is also reminded that there will be another opportunity at the end of the semester to comment on the class again in an anonymous fashion. Students do not take this survey using paper and pencil.

The students are reminded several times in the instructions and in the Survey Announcement Link that the survey is anonymous and that the instructor will not know who said what. Results from surveys are reported as percentages. Open-ended questions have simple listings of the typed comments. Faculty members are reminded not to look at the survey results until an ending survey date has arrived. The instructor can see *who* took the survey, but not what the person said *unless there is only one person who has answered the survey.* On most questions, students answer using the following scale with these choices: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree and Unable to Judge. Each faculty member can adapt the survey to his or her specific discipline, add or delete questions, or leave it in the more generic form.

Findings

After mid-term, we surveyed the 18 faculty members who attended the workshop to see if they used the survey. We used a simple email survey, and all but two faculty members responded. This survey is not meant to be used to show any statistical differences; it is simply reporting usage. These are the questions we asked them.

1. Did you actually import and use the survey after attending the class or looking at the survey in BBDEMO?

2. Did you give it to your class once or more often? If more often, how often?
3. Did you change the survey - add or delete questions?
4. Did you find it easy to follow the directions you were given to IMPORT and TURN ON the survey?
5. If #4 was NO, could you list some of the problems you had. If YES, skip this one.
6. Did you give extra points to your students to motivate them to answer the survey?
7. What was your response rate? How many students actually took the SURVEY in your various classes? (example: 25/39)
8. Was the information you obtained from the survey helpful to you in improving teaching and learning in your classroom? If you would like to, please explain how you used some of the responses and what you did as a result of the responses from your students.
9. Did you communicate to your students that you would use the information from the survey to improve teaching and learning? The literature says this is important.

Eight of the faculty members had actually administered the survey at this time while four said they were going to do so soon.[Q1] One had given it more than once.[Q2] Some of those who had not yet given the survey or do not plan to give it did not answer some of these questions, so various answers will not always add to 16. Six either did not change the questions or did not plan to change the questions as given, while five did make changes.[Q3] All found the instructions easy to follow.[Q4] Six gave extra credit (points) for participation, while four said they would not do so.[Q6] Many did not report response rates, but those giving points had in the 70-85% response rates, while the others had response rates in the 30-60% range. Nine said they had or would be communicating with their students about how the survey results would be used in the current class to improve teaching and learning.

Limitations, Implications and Conclusion

There are several implications that can be drawn from the present study. First, Black-board is fairly easy to use for anonymous surveys, but it is not robust or even very usable as far as data analysis is concerned. Results cannot be sent to a statistical analysis program such as SPSS or SAS or even a database such as Microsoft Access. If you are satisfied with simple percentages for each answer, then Blackboard is sufficient. Second, instructors have to be willing to wait until the time period has expired for the students to complete the survey before looking at the results. Otherwise, they may be able to figure out what a "lone" person has said. A sophisticated survey instrument would not have this problem. Third, students who accidentally get out of Blackboard while answering the survey cannot be "reset" to begin again like a quiz. You must have some "dummy" names for these students to use in this event. Courses that are totally online courses, as opposed to those that use Blackboard as a component, should be distinguished as such within the survey and possibly have some unique questions. According to Theall (2000), we know very little about the dynamics and influence of web-based and distance education vis-à-vis the evaluation of teaching in these contexts. The roles, responsibilities, and tasks of teachers and learners in these online classes are different from those in face-to-face classes. These differences should be explored and addressed in a future Student Survey of Teaching. Finally, faculty who give mid-term evaluations and have consultation about them raise their scores to the 75th percentile on evaluations given at the end of the term (Cohen, 1980). Faculty who only examine their mid-term survey results raise their scores to the 58th percentile from the 50th percentile of those giving no mid-term survey. However, this paper did not address the use of faculty consultations. Since it is quite obvious from a review of the literature that consultation is tremendously important in making improvements in student ratings in the end-of-term survey, the workshop to teach faculty "how to import" the survey into their Blackboard class should also include instruction and help about what to do with the survey results after the fact in order to get these kinds of improvements.

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Appendix - I

Directions for getting the survey and installing it in your Blackboard class

To SAVE to your hard drive the documents you will need:

1. Go to the BBDEMO class.
2. Click on Course Information. Here you will find the zipped file that you will need to make the survey for YOUR Blackboard classes. This is file #1 and is called Export_StudentSurveyofTeaching.zip. There is also a document that has the words prepared for you to use if you want in actually making your survey available to your class. It is file #2 under Course Information.
3. Double-click on the zipped file and SAVE to a folder on your hard drive that you will remember. Do the same for the document called "Information to use when Preparing Student Survey of Teaching."

Now you have two files saved on your hard drive that you will use in the following steps.

To IMPORT this zipped file into your Pool Manager:

1. Go to YOUR Blackboard class where you want to give the survey
2. Click on CONTROL PANEL
3. Click on POOL MANAGER
4. Click on IMPORT POOL

5. Click on the BROWSE button and find the folder where you saved the zipped file.
6. Double-Click on this file. Then press SUBMIT.
7. You should see this file on your screen in a list. It's now been imported.
8. Click on RETURN TO CONTROL PANEL.

To make the survey for your class using Assessment Manager:

1. You should be in Control Panel. Click on ASSESSMENT MANAGER.
2. Click on Create New Assessment.
3. A box appears that says "Type of Assessment." There is a dropdown box. Click on the dropdown arrow and select SURVEY. Click SUBMIT.
4. Type Student Survey of Teaching in the first box that says "Enter a Name:" or type whatever you want to call your survey.
5. Type a description in the box that says "Enter a Description." The next paragraph is what I type into this box. [You can edit this paragraph or type your own.] The info in this box will appear with the link in the announcement telling the student about the survey. [See BBDEMO to see how the announcement link looks.]

Please take this survey for participation points. It is anonymous! I will know that you took it, but not what you said.

6. Click Submit.
7. The next box says "Enter Instructions." The next paragraph is what I use here. Use this or type your own.

This is an anonymous survey. Only I will see the results but I will NOT know who said WHAT, only that you responded to the survey. I cannot match up your name with your answers. Please respond to the questions and press the Submit Answers button at the end when you have completed all 28 questions.

8. Click SUBMIT.
9. The next screen says, "Select a Question Type." Click on the dropdown arrow and SELECT "From Question Pool or Assessment" at the bottom and then click SUBMIT.

10. Put a check mark to the left of Student Survey of Teaching – 28 questions and then click the SUBMIT button at the lower right. You don't need to preview at this time.

11. The next screen will have "ALL" selected for "Related Categories" and "Select Question Type." Leave those selections as they are and click SUBMIT.

12. The next screen says "Search Results." You will need to check (click each box) all of the 28 questions. If you do not want to use one of the questions in your survey, then do NOT check off that question. Do NOT delete Question #5 since

that is where I've explained what the selections mean, e.g., SA = Strongly Agree. You will have to scroll down the page to check all 28 questions. At the bottom of this page, click SUBMIT to select all questions for YOUR survey.

13. At this point, I make the first essay question (it's really an open-ended question) number 28 by clicking on the drop-down arrow with #1 and selecting #28 instead. I want the open-ended question to be the last question. I also make the #2 question about Blackboard usage to be #27. That's just my preference.

14. You can add your own questions at this point by click on the "Add New Question" button at the upper-left side of the screen.

15. You are now ready to click on the SAVE AND MAKE AVAILABLE button.

16. Click on the YES button in the block that says "Make Assessment Available." Leave Generate an Announcement? as it is with YES checked. Leave "Place a Link in Assignments" as it is.

17. DO NOT allow multiple attempts. Each student should answer only once.

18. Scroll down and click the SUBMIT button.

19. Your survey has now been created. Click on the Return to Course button.

To View the Results of the Survey:

1. Click on Control Panel
2. Click on Online Gradebook
3. Click on Report by Item
4. Click the dropdown arrow and Select Student Survey of Teaching. Click GO.
5. Click on VIEW ITEM ANALYSIS
6. To see the answers to the last open-ended question, go to that question and click on VIEW RESPONSES.
7. Click the BACK button at the bottom left to return to where you were.
8. Click on RETURN TO COURSE.

Appendix - II

Student Survey of Teaching

Instructions: This is an anonymous survey. Only your teacher will see the results but he or she will NOT know who said WHAT, only that you responded to the survey. He or she cannot match up your name with your answers. Please respond to the questions and press the Submit Answers button at the end when you have completed all 28 questions.

1. The following were used as resources in this class: (check all that apply)
    a. the textbook
    b. PowerPoint
    c. A computer
    d. A projector hooked to a computer
    e. An overhead projector
    f. The Internet
    g. Other reading materials (articles, etc.)
    h. Other
2. This class has added to my skills in the following ways: (check all that apply)
    a. Solving problems
    b. Writing papers
    c. Designing lab experiments
    d. Finding trends in data
    e. Critically reviewing articles
    f. Working effectively with others
    g. Giving oral presentations
    h. Learning more about computer programs
    i. Other
3. In this teacher's classes, I have gained a good understanding of the concepts covered. (The choices are for questions 3 through 26 but will be listed here only once.)
    a. Strongly disagree
    b. Disagree
    c. No Opinion
    d. Agree
    e. Strongly Agree
    f. Unable to Judge
4. This teacher explains the purpose of each class as it relates to the unit.
5. This teacher is well prepared for class.
6. Classes by this teacher are well organized.
7. This teacher communicates effectively with students.
8. This teacher demonstrates enthusiasm for the subject.
9. This teacher encourages student participation in class and/or groups.
10. This teacher provides me with opportunities to apply what I learn.
11. This teacher encourages me to be responsible for my own learning.
12. This teacher is sympathetic to student differences.
13. I found this teacher helpful if I encountered difficulties in this unit.
14. It is clear what I am expected to learn in each class.
15. This teacher provides me with useful feedback.
16. Work graded by this teacher is returned in a reasonable time frame.
17. This teacher marks assigned work fairly.
18. The course syllabus was clear and unambiguous.
19. Method(s) of evaluation to be used were clearly explained.
20. The subject matter covered thus far has been well organized.
21. Difficult topics have been clearly explained.Student questions have been encouraged.
22. Resources required for the course were available.

23. Important topics of the course have been included on tests and/or projects.
24. Feedback about student performance on course assignments has been provided.
25. Instructional quality in this course has met my expectations thus far.
26. Referring to our course management tool, Blackboard, (check all that apply)
    - ○ My teacher does NOT use Blackboard
    - ○ It's used very little
    - ○ It's used a great deal by this teacher
    - ○ Blackboard helps me to stay on track
    - ○ Blackboard is a good thing for us to have
    - ○ I don't like Blackboard
27. Comments relating to the teacher can be typed here. There will be an opportunity to comment on the class overall at the end of the semester with another instrument. This is an anonymous survey. The teacher will see the results but won't know who said what. Please confine your comments to issues relating to teaching and learning. Any comments that are personal, sexist or racist will be destroyed. Additionally, what are one or two things that this teacher does that help you learn?

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Web-Based Modifications for Students with Special Needs; A Starting Point

By: David Currie, Delbert Hall, Rosalee Seymour
Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: Faculty :: Lecture/Presentation :: Level: All

Proceeding

Abstract:

Legislation has made it necessary for government and commercial websites to make available online services for all persons using the Internet, including those with special visual and audio needs. Educators need to prepare websites for all students, not just those with full vision and hearing. We do not wish the role of content conversion to suitable formats to fall upon the Disabilities Office, although they, and the students they serve are valuable resources. Nor do we wish to fall into the passive position of producing image-free sites for persons with visual disabilities or audio-free sites for persons with hearing disabilities.

Introduction:

Our goal is to produce a small number of model online courses that can be used as guides for others as they work to develop websites that will make rich content available to all students. We hope to work with our Disabilities Office and students with special needs at our campus in an attempt to achieve this goal. We have recently decided to include groups of adult students from across a broad age spectrum in order to determine if (and if, how) age should be considered as an additional important factor in site design. From the outset, we have identified three concerns.

We Must Not Oversimplify the Problem: Many of the sites we visited in order to gain insight into web design for persons with special needs left us with a bad taste in our mouth, a feeling shared by a number of persons with special needs. A number of these sites and their accompanying "page evaluation" systems are more highly regarded by institutions than by individuals. We were more than a little surprised to find, for example, that the home page of the company which owns one of the most highly touted special needs site evaluation systems on the Internet, fails to receive approval when tested with their own system.

There is a general tendency towards oversimplification of websites for persons with special needs. While some of the modifications are better for all (presumably, none of us would regret complete elimination of frames), other modifications represent the loss of potential learning material. Some general tactics, for example, include discarding images, dynamic HTML and video files, eliminating tables, reducing the number of links and removing forms. Where forms are removed, they are often replaced by telephone numbers. We might agree that some of these elements are best removed from the navigation system, but not entirely removed from a website. What is often left is a bland, text only document, to be read by a rather bland text reader which is most often lacking in the area of so-called "artificial intelligence." Those who experience generic text readers for the first time are generally surprised at the failure of the best, most expensive text readers to handle even the simplest of punctuation in an even remotely human fashion.

We Must Maintain Richness of Content: Students with visual disabilities are not averse to surfing sites with plenty of rich visual content. Nor are students with hearing disabilities averse to visiting sites with music and sound. Visual content that aids in the learning process must be described, to those who cannot see it, in exacting detail. Your Disabilities Office can help you find persons with professional experience in providing such descriptive narrations. The typical alternate text tag provided on most sites is wholly inadequate. Historically, alternate text tags were designed for those surfing with browser images turned off; no one we asked has ever actually done this. On the other hand, a highly detailed description of the material contained in a figure or in a table, along with some interpretation of that material, proves beneficial not only to students with visual disabilities, but to all students. Similarly, a detailed text description of a piece of music, for example, is beneficial not only to students with hearing disabilities, but to all students seeking to determine the reason for inclusion of a particular piece of music on a particular web page, or to better understand a piece of music in a music class.

Many students will benefit from online "voice overs" which incorporate the recorded voice of the professor. "Voice-over" presentations, in which an instructor records a discussion of material, are easily created using PowerPoint or FlashCam. We recommend that "voice-overs" should generally accompany slides pertinent to the curriculum, but a picture or two of an instructor is not entirely unforgivable. Similarly, all students benefit from 3-D imaging, particularly where students with visual disabilities have access to "3-D relief printers." From a purely technical aspect, computers are probably not too far from allowing users to determine the shape of 3-D objects using a joystick-like device that will generate resistance as one probes about the perimeter of a 3-D onscreen object. In fact, such devices may soon allow one to experience the sensation of "viscosity," by allowing one to probe that are not solid. We are already at the point at which synchronous discussion using text or voice based chat is possible. While many students prefer text-based chat (which allows them to print a discussion), instructors should be prepared to encourage voice-based chat where students with visual disabilities are among those enrolled in class.

We Must Re-Assess Navigation Strategies: Navigation is a recurring nightmare for us. The mid-90's brought us two-dimensional navigation strategies that called for nesting of folders within folders. This led to the creation of a lot of two-dimensional, textbook like websites. The close of the 21st century brought us more nearly perfect navigation strategies, allowing most of us to develop a 3-dimensional approaches to navigation, and allowing visitors to our sites to get anywhere within the site with a maximum of 2 or 3 clicks. As most educators have realized, a good navigation scheme is central to the development of a good class website.

In developing a suitable navigation strategy, we continue to consult with students with special needs, as well as computer novices of all ages (including retired persons). We know that the navigation scheme needs to be uniform, and that it must be usable by all who surf our sites. The navigation scheme must not be overly complex. While it does not need to be strewn out on every page of the site, it must be accessible via a common link location on every page (this means one extra click to get anywhere, but eliminates problems associated with text readers). It must be large enough to be easily read and link colors (including visited and active) should be altered from the traditional in order to be more clearly identified as links by persons with red-blue color blindness. It should not involve forms or tables that are so "code complex" as to burden the non-artificial intelligence of text readers. Text readers chew through navigation tables like out of control lawnmowers, scattering audible HTML coding as they go. To appreciate how awkwardly text readers handle forms, tables and links, one has to download a text reader and use it to surf one's own site. Try maneuvering around your site using only your text reader as a guide (ie. with your eyes closed).

Conclusion: For many of us, modifying our instructional websites to make them more amenable to a larger audience means throwing out, in particular, outmoded navigation elements. We use the term "outmoded," here, to indicate that, unless a navigation structure is usable by nearly everyone, it may soon be subject to challenge as no longer being acceptable. We also question the premise that the best solution to dealing with disabilities is to provide text-only versions of our websites. While this may make the websites more amenable to persons with Braille readers available, it is a stop-gap measure which we see as directing someone to a Braille reader and away from our instructional website. Working directly with individuals with special needs is a sure-fire method of determining what modifications are necessary, and this may be particularly true of any attempt at simplifying navigations strategies.

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When Good Intentions Are Not Enough: Motivating Faculty "Ownership" of IT Initiatives

By: Joseph Hughes

Track 1 - Effective Integration of Technology into Teaching & Learning
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

This paper analyzes impediments to implementation of instructional technology initiatives as seen by a faculty member who has actively used IT since 1995. The three major impediments (the steep learning curve, difficulty in assessing success, and questions of applicability toward professional advancement) are discussed and some tentative solutions suggested.

1. MAN OF CONSTANT SORROW

One of the greatest joys of the Coen Brothers' movie, *O Brother Where Art Thou*, is the delightful rendition of "(I Am) A Man Of Constant Sorrow" by the Soggy Bottom Boys. George Clooney's on-camera antics and Dan Tyminski's off-camera yowling go so far over the top that the sufferings of the song's hero seem ludicrous. The poor guy has been in constant sorrow all of his days; for six long years he's been in trouble; he has no friends to help him now; in case he dies upon that northern railroad, you're welcome to bury him in some deep valley. You can't help but laugh. Unless, of course, you're one of those men and women of constant sorrow who have tried to make instructional technology initiatives count toward promotion and/or tenure.

Thomas A. Marino states the problem succinctly at the beginning of his recent essay (Marino 2001):

"After years of incorporating information technology in classroom teaching in the belief that it helps students learn, I have been asked whether I would recommend that other faculty members do likewise. Though using information technology is a good way for faculty members to rethink their teaching methods, most often my answer is no—not for the untenured and definitely not for those thinking of becoming totally engaged in teaching and technology."

His article concludes not with a plan of action, or even a suggestion. Rather, he raises a question many of us continue to ask ourselves:

"In addition, pioneers need to be rewarded for exploring the cutting edge; right now, many pioneers find that all they get is cut. But do we really have to bleed to make progress?"

Dr. David Passmore of Penn State University ends his recent article on a more spiritual note. He believes that two of the three major impediments, resources and intellectual property issues, will be resolved over time. Not so the impediment of a faulty reward system (Passmore 2000):

"Removing the last impediment requires nothing less than a cleansing of the soul of the university. I, for one, always have wanted to witness a genuine religious conversion. Show me a miracle."

Again, many of us - all of us, no doubt - would love to witness that religious conversion too. Please note that I am not bemoaning this situation. The rules of the game have always been crystal clear. It was beaten into my head all through graduate school and all through my years on tenure track that teaching -no matter how excellent - without scholarly publication was untenurable. If I wanted to pursue my dreams of teaching at the college level, I had better publish.This fact of academic life is not going to vanish any time soon. We have all heard the stories of academics denied promotion or even tenure for paying too much attention to their teaching. Some of us have even lived the story ourselves.

Before I launch into my litany of woe, I should make clear that I am hardly a man of constant sorrow. I am a tenured full professor in a department with exceedingly modest scholarly expectations. I get paid to read and talk about dead Roman and Greek people, and write about the Roman orator-rhetorician Marcus Tullius Cicero. The students in my classes have to pay attention to whatever I want to say. I have even gotten funding to speak at technology conventions. I am, overall, a very fortunate man. But I did not enjoy my lesson about how instructional technology counts toward promotion.

2. HOW I LEARNED MY LESSON

Six long years ago, I was already a tenured associate professor of classics when technology such as laser-disc multimedia, home-made compact discs, e-mail lists, videoconferencing, electronic bulletin boards and something called World

Wide Web came to Southwest Missouri State University. I still enjoyed reading and talking about the dead Romans and Greeks (as I do to this day), but I admit that I had gotten a little tired of writing about them. I was ready to look into the future and to me, that meant the World Wide Web. In Fall 1995 I created web sites for my department and for the College of Arts and Letters. This was back in the bad old days when WYSIWYG was a type of toupee and if you wanted good HTML, you had to write it yourself. I mentored two other departmental webmasters through the process of creating their department websites. In Spring 1997, I created websites for several local not for profit organizations, including the local AIDS support organization and Habitat for Humanity. In Fall 1997, I created websites for my Myth telecourse and my Senior Honors Seminar. I hadn't exactly neglected my dead Romans and Greeks: I had written three articles on ancient rhetoric, one of which supported by a University research fellowship. But I had in fact shifted my focus to pedagogical technologies I found fully as exciting and as promising as Cicero found the speeches and rhetorical theory of the ancient Greeks.

My lesson was delivered early in Spring semester 1998. In compiling application for promotion to full professor, I was careful to document just how I had used the Internet to serve my students, my fellow departmental webmasters, the University community, and the Springfield community. In Spring 1998 my application was rejected by both the full professors on the departmental personnel committee and by the (former) department head, with no reference whatsoever, positive or negative, to my work with information technology. The full professors on personnel committee claimed that my research did not show "sustained" excellence, whatever that meant. The head said that I had "failed to adduce a big ticket item, such as a book, a grant, or a recital." Whatever that meant. I knew for a fact that I had published more than the full professors and the (former) department head combined, but this was apparently irrelevant. I also knew my application would receive a fair evaluation from the dean, but I also knew that I had two strikes on me, so I withdrew it while I still had some semblance of self esteem. As fellow Classicist at another institution put it: "the road to promotion does not begin with the letters HTTP." From that time on, I have operated on a simple principle. Show me the money.

From that time on, I have not assisted any University entity with its Internet or instructional technology needs unless satisfactory compensation was stipulated in advance and in writing. In the spring of 2000 the personnel committee and department head ruled favorably on my promotion to full professor. This time around, both the full professors on personnel committee and the (former) department head had lots of nice things to say about my wonderful work with information technology, all of which meant absolutely nothing to me. I got the promotion I wanted and if the MCL department wants instructional technology work from me, it still has to show me the money.

3. COMMUNICATION BREAKDOWN

In my admittedly jaundiced viewpoint, colleges and universities face three major obstacles in bringing together teaching and instructional technology. I would like to take them in order. First, **the learning curve** for instructional technology is still rather intimidating. Second, the benefits of successfully incorporating instructional technology are difficult to quantify effectively. Third and worst, the applicability of incorporating instructional technology toward tenure and/or promotion remains highly dubious thanks to a communication breakdown between the constituencies involved in the tenure and promotion process.

a. THE LEARNING CURVE

First, the learning curve. Although technologies such as web publishing (FrontPage), courseware (Blackboard), and multimedia development (iMovie 2) have become far more user friendly with time, they are still daunting to learn, much less master. The days when interested SMSU faculty members acquired their own software and taught themselves how to use it are gone, thanks to the technical training provided by the Office of Instructional Technology and by Continuing Education. The folks who provide technical training are good, knowledgeable, hard-working people who take their job very seriously.

But workshops and short courses and technology expositions are in themselves not enough. I have learned over six years of helping colleagues work with various technologies that a doctorate does not equal instant mastery. Faculty members who want to work with instructional technology have to put up with long hours of trial, error, and error, just like any other student does. Inevitably the faculty member winds up sitting in front of a computer, faced with a program that just won't work, a bushel basket full of burning questions, and a splitting headache. I know because I've been there. Frequently. When our students hit the wall, it is our job as teachers to come to the rescue, with regular one-to-one contact, reassurance, and above all, the feeling of safety which comes from knowing someone is looking out for you.. The technical training folks can not be everywhere on campus simultaneously.

Where is the safety net? Just about every hallway, or every department at least, contains a kind and patient soul who can help his or her colleagues put page numbers on a Word document, install a gradebook program, or download an attachment with Outlook. Faculty members who can walk their colleagues through FrontPage XP, or Blackboard, or WS FTP, or iMovie 2 are far more rare. They may be busy torturing themselves with newer and more promising technologies. There is also the chance that their kindness and patience has worn out, or has been beaten out of them. If they are to be expected to help, they have every right to expect they will be shown the money.

b. ASSESSING INSTRUCTIONAL TECHNOLOGY

Let's assume that a hypothetical professor completes an instructional technology project. It's time for the first stage of assessment: field testing. The technique is simple, and doesn't require much else besides time. Lots and lots of time. Basically, field testing consists of having users of all possible skill levels use the instructional technology project over and over again on every possible platform - and then responding to the inevitable barrage of problems and complaints. This requires considerable powers of persuasion (remember, not everyone is as interested in your project as you are), a thick skin, and the willingness to go back under the hood, as it were, and tinker with your project until you finally get it right.

Just to give you one example of how important this is, the (former) department head once showed me a Powerpoint presentation she had worked very hard to create for the class she taught. Although it was very graphic intensive, and took forever to download even over the campus backbone, it worked just fine on my Windows 98 machine when I used the latest version of Microsoft Explorer. When I tried to watch the presentation with Netscape, I got nothing but gibberish. When I tried to watch the presentation on my Macintosh G3, the Mac immediately crashed. To anyone without a Windows machine or without the latest version of MS Explorer - or, heaven help them, Macintosh users, or a Netscape user, or someone dialing in via a modem connection - the Powerpoint presentation would be nothing but gibberish even if it didn't crash the computer at once. What could I say? I had neither the time nor, frankly, the inclination to be of any assistance. How many potentially useful applications of instructional technology fall through the cracks at precisely this point in the process?

Let's say, though, that the project finally works. The second stage of assessment is when the hypothetical professor tries to convince his or her department head and personnel committee that it enhances student learning. This presumes that the department head and the personnel committee have the technical knowledge and/or intellectual energy to evaluate the project. In my experience, this is presuming too much.

Or perhaps the hypothetical professor wants to apply for some sort of grant. Unless he or she is just trying to cadge some time off or a few extra bucks, he or she must furnish definite proof that the project actually does what it claims to do. Furnishing definite proof requires a certain amount of scientific technique that I, for one, don't possess. My academic specialty consists of examining two thousand year old speeches for references to popular entertainments and discussing their social and rhetorical significance. I'm not interested in learning how to wield "base line data" to justify what I do (or try to do) with instructional technology. And even if I were, I wouldn't have the time to deploy my new statistical wizardry. I would rather be pushing the envelope.

Fortunately, I have tenure and I have been promoted as far as I will ever be promoted. I have acquired the luxury of pushing the envelope with instructional technology on my own terms. How many users of instructional technology fall through the cracks at this point?

c. PROFESSIONAL ADVANCEMENT

Finally, for the really important part - professional advancement. In other words, how does one prove to the department personnel committee, the department head, the college dean, the Vice President for Academic Affairs, the University President, and the Board of Governors that one's application of instructional technology actually counts toward tenure and/or promotion?

Where I am employed, there is no reason to blame the Board of Governors, the central administration, or the college dean. The Board of Governors's decision is the legally binding one, but the Board always accepts the President's recommendations on personnel matters. The President, in turn, makes his recommendation in conjunction with the Vice President for Academic Affairs. In my admittedly limited knowledge, our Dean very seldom overrules the recommendations coming forth from the department level. Much as it gripes me, as a faculty member, to say it – the difficulty of applying instructional technology toward tenure and promotion is not the administration's fault.

In fact, the SMSU Office of Academic Affairs is on record as SMSU's earliest and most vocal proponent of incorporating instructional technology. In a memo of 14 November 1997, the VPAA had these instructions for departments in the process of revising their tenure and promotion documents:

It is important that each department's rewards system, including promotion and tenure, recognize and support university and departmental initiatives in general education (including capstone courses), honors, use of technology, advising, and public affairs.

To this day, I find this memo's emphasis on instructional technology remarkably prescient; at the time, it was positively inspiring. Professionally, however, it led me somewhat astray. Two weeks after this memo's appearance, I turned in the materials for my first attempt at promotion to full professor and learned my lesson about just how big a communication breakdown could become.

Four years afterwards, instructional technology appears in the SMSU Faculty Handbook as a form of "scholarship of teaching," as part of the following list:

- *Scholarly presentations to campus-based or community groups*
- *Critiquing one's own students or colleagues, or consulting with community organizations*
- *Designing and refining media of expression*
- *Improving the effectiveness of one's own teaching through seeking and using peer and student feedback*
- *Assessing effectiveness of new learning technologies for teaching one's own courses*
- *Preparing, compiling, and disseminating custom texts, reading packages,*

and/or ancillary materials for one's own courses
- *Successful grant applications for developing or enhancing one's own courses.*

This is entirely to the administration's credit. Unfortunately, this endorsement does not go as far as it could or should. For six long years, SMSU's academic units have been wrestling to incorporate the ubiquitous "Boyer taxonomy" of scholarship into their tenure and promotion documents. Visionary and fruitful as Boyer's work has proven to be for redefining academic roles, his taxonomy can be almost as tough to conceptualize as it is to implement, especially when it comes to the application of instructional technology (Lowry and Hansen 2001).

At present, the *SMSU Faculty Handbook* (section 2.3.1.2.1) recognizes Boyer's four categories of scholarship: the scholarship of discovery, of integration, of application, and of teaching. Each of these four categories is termed "an essential element of the University mission." Concerning each of first three categories - those of discovery, of integration, and of application - the Faculty Handbook further states: "Evidence of performance in this field is valued both for tenure and for promotion." In stark contrast, the scholarship of teaching's value "alone, is not sufficient for tenure and for promotions." Apparently, the scholarship of teaching consists of developing and tweaking one's personal teaching techniques... something expected of all full-time faculty at SMSU. A footnote appended to this description suggests that the scholarship of teaching, if applied outside of one's own classroom, may carry the same value as the other categories of scholarship:

(NOTE: Activities such as developing or assessing curricula for a larger audience than one's own students, developing educational resources for use by other educators, observing and analyzing student behaviors and/or student-teacher interactions outside of one's own classroom, and assessing effectiveness of new educational methods or technologies outside of one's own classroom may qualify as scholarship of discovery, scholarship of integration, or scholarship of application.)

This attempt at being inclusive is well intentioned, but only adds to the communication breakdown. The innovative use of instructional technology may be conducive to promotion and/or tenure - or it may not. Ultimately, the *Faculty Handbook's* answer to the question "do instructional technology initiatives count?" is "no, except for those instances in which it does."

Given the Faculty Handbook's vagueness on the worth of the "scholarship of teaching," it's not surprising that college and departmental documents can be similarly vague on how instructional technology ought to count toward tenure and promotion. At SMSU, it's been clear since 1997 that the central administration has a vital interest in instructional technology initiatives, but the administration is not interested (nor should it be) in micromanaging the creation of departmental personnel documents. They can't help us make our case. And if you're trying make the case for rewarding instructional technology initiatives to senior colleagues who still can't figure out how to send or open an e-mail attachment, you likely have no friends to help you now.

CHAPTER 4: MOVING THE PROJECT FORWARD

Seen in the light of these stumbling blocks, motivating faculty “ownership” of instructional technology initiatives appears to be a daunting prospect. Even a true visionary like Steven W. Gilbert, founder and president of the TLT Group, wrestles (Gilbert 2001) with the question “why bother?” But I'm not going to give in that easily. I have already invested fifteen years of my professional life in teaching at this university, with at least (God willing) another quarter-century ahead of me. I believe in instructional technology's boundless potential for improving our efforts to produce educated people. And finally, I must admit that I have, on occasion, been shown the money. So here are a few suggestions for moving the project forward.

To my mind, the best tool for **combatting the learning curve** is peer support from faculty colleagues. Tech support personnel are invariably knowledgeable and willing to help. Formal tech support activities such as workshops or online guides are plentiful and helpful. Anyone who can attain a graduate degree in his or her discipline and keep a job teaching at the college level is certainly intelligent enough to learn how to incorporate instructional technology into his or her teaching. But statements like this only produce pressure, and ultimately, resistance. In six long years of mentoring interested colleagues, I have spent far more time cheerleading than I have teaching. And the cost has proven far less than prohibitive. As a colleague and friend, who is now my department head, has observed (Kernen 2001): “Dr. Hughes' help can still be enlisted with the mere smell of coffee which will inevitably lure him to my office.”

The question of **assessing applications of instructional technology** remains the most puzzling. In my experience, university assessment entities are already busy enough without venturing into this new and uncharted sea. The MERLOT (Multimedia Educational Resource for Learning and Online Teaching) project at www.merlot.org provides, among other things, peer review of instructional technology projects: its promise is immense, but will take a long time to become useful to rank and file faculty members. A more immediately helpful approach is frequent service on personnel committees, internal grants committees and/or faculty rewards committees. Even if one cannot immediately press his or her own case, one can help establish useful precedents for future users of instructional technology. Writing letters on behalf of colleagues who have worked with instructional technology is another useful tool: having received one such encomium from a colleague in another department, I can also testify to its motivational effect.

I would mention two ways of helping make instructional technology more conducive toward **professional advancement**. Anecdotal evidence indicates that administration is demanding greater accountability from faculty members. At SMSU, we now have annual meetings with the department head to review the past year and establish goals for the year ahead. These meetings are beginning to carry the weight of a contract. This is an excellent opportunity for faculty to ask for support and recognition and an excellent opportunity for department heads to work toward granting it. Another way of approaching the problem is through the revision of departmental personnel documents and/or guidelines for tenure and promotion. These documents are in a continual state of flux, and nobody in their right mind (at least in my department) wants anything to do with them. A leadership role on a committee tasked with revising or rewriting them may well become a bully pulpit for advancing the case of appropriate rewards for the use of instructional technology.

5. THESE THINGS TAKE TIME

The hero of "(I Am) A Man Of Constant Sorrow" concludes his litany of woe on a surprisingly hopeful note: the promise that he will meet his beloved on God's golden shore. I'm not expecting to see that golden shore any more than I expect to see the religious conversion that Professor Passmore calls for. But I hope that I have offered some useful suggestions for stopping, at least to some extent, the bleeding Professor Marino has mentioned and from which we have all (to some extent) suffered. I do believe in a day when faculty who incorporate instructional technology into our teaching will look back and laugh. But I also know these things take time.

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A Web Enabled Graduate Course: Two Perspectives

By: James Penrod, Barbara Perry

Track 2 - Technology Tools for Use in the Classroom
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

Web-enabled graduate courses allow adult students to choose and utilize powerful new technologies which will enrich their learning experience. Such technologies allow students to use hardware, software and the Internet to positively impact each student's unique learning experience. Instructional technology becomes an enabling force to transform higher education by enhancing student learning when effectively used by IT fluent faculty. We know that the future of higher education will be dramatically different than it is today. And, we know that one way we can impact graduate students at this time is through an enriched curriculum that demonstrates the best practices in education, meets the variety of learning styles of students, enables individual exploration and discernment, and stimulates intrinsic motivation.

Introduction

Stanley Katz, Director of Princeton's Center for Arts and Cultural Policy Studies suggested at the Forum for the Future of Higher Education, "we need to be very careful to ensure that information technology serves the university, and not the other way around . . . we have reacted to technology, rather than thinking creatively about how it might enrich our basic educational mission . . . we have confused a tool with a goal" (Katz, S. 2001). This statement reflects two very significant perspectives. First, too often information technology has been served by the university rather than serving it-a statement that we believe to be true. Secondly, IT is only a "tool"-which we do not believe to be the case. We believe that instructional technology utilized by IT fluent faculty can effectively transform higher education by changing what happens in the classroom thus enhancing student learning. We know that the future of higher education will be dramatically different than it is today. Yet, we know that one way we can impact students at this time is through an enriched curriculum that meets the special needs of adult graduate students.

Web-enabled graduate courses allow adult students to choose technological options which might enrich their individual learning experience. Wlodkowski (1999) suggests for adult learners to experience intrinsic motivation to learn, they need to connect who they are with what they learn; they need to experience choice and success in the learning activities. Kolb (1982) suggested that "motivation to learn may well be a result of learning climates that match learning styles and thereby produce successful learning experiences" (p. 248). Web-enabled courses which include PowerPoint presentations that are integrated with a course management system to replace the traditional lecture provide ubiquitous access to lecture notes, reference materials, and expedite communication and dialogue between the instructor and course participants. Such new methodologies and technologies rely on instructor adaptation and student choice and self-direction. Thus, this course structure allows adult students to choose from a variety of options for different student learning styles which will enrich each individual student's educational experience, increase student motivation to learn, and enhance the individual's learning and understanding.

Furthermore, we believe that web-enabled courses allow the instructors to cultivate the best practices to promote student learning. Although Chickering and Gamson developed their Seven Principles for Good Practice for undergraduate students, we feel they provide benchmarks for excellence in graduate education.

Rationale for Course and Course Activities

The course "IT Trends and Issues in Higher and Adult Education" was developed to prepare future and current administrators with a broad-based understanding of key information technology issues on college and university campuses. A course objective is that all students leave the course with a basic understanding of information technology fluency concepts and have acquired skills to enhance their fluency. The course utilizes many of the information technology capabilities available to instructors and students at The University of Memphis. The course is taught in a smart classroom where the instructor and each student have a personal computer and access to all technological devices of a smart classroom and the World Wide Web. All PowerPoint presentations with full lecture notes attached are provided online to the students prior to the class and students are expected to have studied the lecture notes and completed assigned readings to enable engaged discussion and dialogue during class. CourseInfo was used as the course management system providing access to student web pages, private group work space, e-mail, discussion board, chat, cumulative grades, assignments, syllabus, and external links to pertinent information and extensive references. The course is taught in the extended summer session which meets every other week for five weekends. Expert guest speakers and field trips to the main computer center, the telecommunications hub, and technological training rooms augment the learning experience for the students.

All course activities focus on information technology as an enabling force different than any we have seen before. Students are required to complete the following assignments which must be submitted via the Internet using the course management system, CourseInfo.

- find articles concerning information technology issues related to higher education from an electronic source, summarize them and be prepared to lead a discussion about the topic
- write a term paper on a higher education topic of interest to the student and approved by the instructor that includes hot linked footnotes to digital sources from the WWW
- develop a technology related project that is meaningful to the student and prepare a demonstration of the outcome for class
- participate in a summer long group case study which serves as a final examination that includes a written report and PowerPoint presentation to the class

Adult Learning

There is no universally accepted, comprehensive, definitive theory of adult learning yet according to Knowles' concept of andragogy, adult learning helps inform educators that develop curriculum for adult students. Knowles (1980) suggests:

- An adult's self concept moves from that of a dependent personality to being a self directed human being
- Adults have a great deal of experience which enriches learning
- Adults seek relevance from learning experiences - they are more problem centered than subject centered in learning
- Adults are motivated to learn from internal factors not external factors

Thus, students in the doctoral program in higher and adult education come to class as a requirement for graduation and with a desire to learn something that they will be able to use immediately to help them be successful in future work or in current work situations. Many are mature individuals who have years of work experience to use to enhance what is presented in class. They know how they like to learn, they are intrinsically motivated, and they are self-directed, able to fill in the gaps when the educational experience does not fit their preferred learning style.

A web-enabled course provides the students with a plethora of ways to learn. Consequently, students are able to be intrinsically motivated to learn, "to be curious, to be active, to initiate thought and behavior, to make meaning from experience, and to be effective at what they value" (Wlodkowski, 1999, p. 7). In addition, "motivated learners care more and concentrate better while they expend that effort, and they are more cooperative" (p. 6). Thus, the methodology should enhance the pedagogy providing the students with an enriched learning experience.

Student Learning Styles

David Kolb (1982) suggests "Continuous lifelong learning requires learning how to learn, and this involves appreciation of and competence in diverse approaches to creating, manipulating, and communicating knowledge" (p. 252). Kolb identified four prevalent learning styles. They are the Converger, the Assismilator, the Diverger, and the Accommodator. Each learning style has dominant learning abilities and resulting needs for a good educational experience (Murrell, P. & Claxton, C., 2001).

Convergers' dominant learning abilities are abstract conceptualization and active experimentation. They prefer learning situations where there is one correct answer and they prefer to work with things rather than people. Given these preferences, convergers enjoy lectures and programmed instruction such as the PowerPoint slides and the lecture notes being online. They also would enjoy the field trips, lectures by experts, developing the project of their choice, researching a term paper, and the problem solving involved in the final group based case study.

Divergers' dominant learning abilities are concrete experience and reflective observation. Their greatest strength lies in their imaginative ability and their ability to view concrete experiences from a variety of perspectives. They enjoy brainstorming exercises and activities that involve people and emotions. Class activities that are concrete experiences include: the guest speakers, the field trip, case studies, dialogue about the lecture notes, and student's association of work related activities to the topic of the session. Students are able to engage in reflective observation in developing the article summaries where they can reflect on what they have learned and group activities such as the final case study where they have an opportunity to discuss class sessions with class mates.

Assimilators' dominant learning abilities include abstract conceptualization and reflective observation. They enjoy inductive reasoning and fixing disparate observations into an integrated explanation. They are less interested in people than in abstract concepts. It is more important that a theory be logically sound and precise than practical. Class activities such as PowerPoint slides online, dialogue and inquiry about the lecture notes, and the technical aspects of being introduced to new instructional technology will appeal to the assimilators in class. They will also enjoy the reflection and observing involved in the article summaries and group work where they get to make connections with other classmates and discuss topics covered in class.

Accommodators are best at concrete experience and active experimentation. They are risk takers and enjoy carrying out plans and trying new ways of doing things. They are intuitive and rely on people for information rather than their own analytical ability. They rely on facts rather than theory. Given these preferences, accommodators will enjoy the expert lectures, the field trips; the group based case study final as well as developing the project of their choice, researching a term paper, and problem solving related to new experiences on the Internet and with smart classroom technologies.

The ten students from the class on which this paper is based likely represent most or all of the four learning styles. A look at the course plan indicates that there will be learning activities that appeal to all of the learning styles. It is important to note that the students are required to complete certain assignments, yet the web-enabled course presents relevant important material while offering choices and encouraging self-direction in meeting the class objectives.

Seven Principles for Good Practice

As Chickering and Ehrmann (1994) note, technology can advance the Seven Principles for Good Practice in Education. They suggest and we demonstrate:

1. Good practice encourages contacts between students and faculty - Electronic mail, computer conferencing, and web-enabled courseware increase opportunities for students and faculty to converse and exchange work in a faster, easier way than previously experienced. Students are less inhibited to share concerns and controversial ideas by utilizing the tools of information technology.
2. Good practice develops reciprocity and cooperation among students - Group projects, collaborative learning, and group problem solving are enabled and strengthened through the use of the communication tools of electronic mail and web-enabled courseware. Students relied on the courseware and e-mail to develop the case study final examination and presentation. Some students traveled a distance to get to the University of Memphis campus and the use of the technology enabled them to participate in group work and not leave their homes.
3. Good practice uses active learning. - The development of the technology project gave students the opportunity to develop a skill that would help them in their work or course work. Students came to the class with a variety of competencies. Some learned to create a PowerPoint presentation, others learned how to utilize the relational database Access, some created web-pages, one put a course online utilizing Courseinfo, and one learned to use software to teach students how to play the piano. Each learned a skill appropriate for their needs but each was actively involved in the learning experience.
4. Good practice emphasizes time on task - Use of technology enables students to study more efficiently utilizing well organized course management systems that are readily linked to appropriate references. Also, use of technology enables students' access to course materials and reference materials without the commute, i.e., over 14,000 electronic library books, a variety of online bibliographies, and the vast resources of the Web.
5. Good practice gives prompt feedback - Students had easy access to grades through CourseInfo and had quick access to the instructor for guidance and discussion through electronic mail.
6. Good practice communicates high expectations - Expect more and you get it. This idea was prominent in the course. Many students came to the class with little computer literacy but left the class with fluency.

7. Good practice respects diverse talents and ways of learning - The variety of resources presented in the class enabled students to access information through print, the web, powerful visuals, guest speakers, actual experiences, collaboration, active learning opportunities, lecture, group problem solving activities, and individual reflection.

Technology and Higher Education

Weigel (2002) suggests ". . . Technology in higher education should enrich and extend the student's exploration of new territory" (p.xiii). He goes on to explain that learning should involve a search for new knowledge that is related to "the activities of play, discovery, and problem-solving" (p.3). Privateer (1999) suggests that higher education carve out a different strategic path that utilizes instructional technology to "reengineer and reinvent curriculum," one that fosters learning as collaboration, discovery, and problem-based cognition. This graduate course was developed to meet adult student needs and expectations for ease in course delivery and to provide ubiquitous accessibility to course materials. We believe that the outcomes of the course exceeded the objectives because the students also experienced collaboration, discovery, and learned through the use instructional technology that expedited the problem-based curriculum design.

Survey Findings

The Graduate Student Perspective

MTSU's Instructional Technology Survey was modified to collect course participants' responses to the methodology and pedagogy used in the course. All ten of the students who completed the course responded to the survey. All of the students are enrolled in the Masters/Doctoral Program in Higher and Adult Education at The University of Memphis. The average age of the participants was 42 with varied educational backgrounds including music, communications, education, landscape architecture, biology, and business administration. Six men and four women completed the course and survey.

The findings are summarized in the following table.
Survey Questions 1- 13: 1- Strongly Disagree, 2 - Disagree, 3 - Neither agree or disagree, 4 - Agree, 5 - Strongly Agree Mean
1) I believe that the use of technology in the classroom can enhance student learning. 4.5
2) I believe that the use of technology in the classroom enhances student learning in my major. 4.0
3) I believe that e-mail communication is an important tool in instructor/student communications. 4.7
4) I believe that web-based instructional materials can enhance student learning. 4.1
5) I have adequate access to computer technology for my educational use. 4.3
6) It is important that U. of Memphis Technology Access Fees are used to provide smart classrooms to facilitate the use of instructional technology. 4.1

7) It is important that U. of Memphis Technology Access Fees are used to provide computers, labs, and resource centers for students for educational use. 4.7
8) I had the skills and knowledge required to use basic computer applications. 4.4
9) I did not have the skills and knowledge required to use basic computer applications, but I acquired the basic skills in class. 2.1
10) I had the skills and knowledge required to communicate electronically. 4.2
11) I did not have the skills and knowledge required to communicate electronically, but I acquired those skills in class. 2
12) I had the knowledge and skills required to use web-based instructional materials. 3.8
13) I did not have the knowledge and skills required to use web-based instructional
materials, I acquired those skills in class. 2.2
14) Number of classes that you have taken in a smart classroom. 1.7
15) How did your instructor's use of Courseinfo applications to present lecture outlines affect your overall learning experience? 1- positively 2 - not at all 3 - negatively 1.3
16) How does electronic communication with your instructors and other students affect your overall learning experience? 1 - positively 2 - not at all 3 - negatively 1.4
17) How does your use of supplementary materials such as web pages or computer based applications affect your overall learning experience? 1 - positively 2 - not at all 3 - negatively 1.1
18) How did your use of Courseinfo to complete assignments, review presentations, and submit coursework affect your overall learning experience? 1 - positively 2 - not at all 3 - negatively 1.2
How likely are you to do the following in the next 18-24 months?
1 - Very Unlikely, 2 - Unlikely, 3 Neither likely or unlikely, 4 - Likely, 5 - Very Likely
19) Communication electronically with your instructors or use electronic mail, listserv, or discussion groups 4.9
20) Use supplementary educational materials such as web page and other computer based applications. 4.6
21) Use a computer to complete assignments, create presentations, or web pages. 4.8

The results of the survey show that the ten students in the course had a positive learning experience utilizing technology. Also, most of the students had the skills and computer access necessary to complete the course. Two students had to learn how to use the technology as they progressed through the class. It is interesting to note that these two students did not rate their learning experience as positively as those who had the skills and ready access to a computer. All of the students but one suggested that use of technology in the classroom was a positive experience and that it was an experience they considered essential to meet the demands of their current or future work in education. They also said that the course requirements enabled them to learn new skills and utilize new technology.

The Instructor Perspective

The UoM class evaluations reflected similar results. The evaluation form consisted of 20 questions in five categories. Lower mean scores generally indicate positive responses. In "Instructor Involvement" (expressed enthusiasm, interest in topic, personal experience, and concern for student learning) the class mean was 1.27 (on a five point scale) compared to departmental, college, and institutional means of 1.29, 1.38, and 1.55 respectively. The "Student Interest" (in learning, attentiveness, course challenge, and competence gained) mean was 1.30 compared to 1.35, 1.51, and 1.68. The mean for "Instructor Interaction" (engaged students to express opinions, receptive to new student ideas, opportunity for questions, and stimulated discussion) was 1.32 compared to 1.26, 1.48, and 1.69. The "Course Demands" (amount of material covered, pace of delivery, amount of homework, and difficulty of readings-all indicating difficulty of the course) mean was 3.30 versus 4.04, 3.84, and 3.62. Finally, the "Course Organization" (concepts related systematically, well organized, logical content units, and direction adequately outlined) mean was 1.20 compared to 1.36, 1.62, and 1.73. The mean response to the capstone question "This course made a significant contribution to your overall personal educational objective" was 1.27 versus 1.35, 1.66, and 1.93. In summary, the course was considered much more difficult than other courses but in almost every comparison was rated higher by the students.

Critical Success Factors

The success of the web-enabled graduate course described in this paper depends upon differing factors that we choose to summarize into the categories of: IT infrastructure, instructor design and intent, and student openness to new approaches.

Infrastructure:

1. The university must have an adequate IT infrastructure that supports high speed connections from the Internet to the individual desktop and a web based access point to the course management system.
2. A course management system which enables a single interface for student access to a variety of options which facilitate learning is needed.
3. Access to electronically available digital library resources is considered necessary.
4. A smart classroom which supports Internet access, a smart board, individual computers, video projection capabilities, etc. is advantageous.
5. Access to technology support personnel and a widely available Help Desk facility are needed.

Design and Intent:

- The instructor needs to recognize that the course must be designed from the ground up; it is not an existing course which will be "modified."
- The course make-up and content needs to focus on the art of thinking and exploration.
- The course needs to encourage the use of skills and knowledge in a variety

of contexts enabling students to extract general principles from their experiences of learning by doing.

- The instructor needs to engage in a variety of activities enhanced by the smart classroom that facilitate student learning. These include:
  - Modeling-helping students learn to think by problem solving and critical analysis.
  - Coaching-observing, offering feedback and asking questions.
  - Scaffolding-by providing hints and help in performing technological tasks and by building in opportunities for student-to-student modeling and coaching.
  - Articulating-allowing students to practice their skills in converting tacit knowledge to explicit knowledge.
  - Reflecting-providing for the process of reflection encouraged by students and the instructor.
  - Exploring-encouraging students to tackle new knowledge domains and problems on their own. (Weigel, pp. 9-11)

Student Openness:

1. Many adult students come into the class with little or no experience in such a course. Even with a self appraisal of adequate computing skills they must learn to use and experiment with newly presented technologies in ways different from past exercises. An inability to adapt would result in great difficulty.
2. Almost all students have little or no academic experience in group-based projects where the grade is based on the group performance rather than individual performance. The competitiveness and blame sometimes encountered must be overcome.
3. Such a course requires hard work and focused study on many new concepts. Students looking for an easy grade would probably not do well.

Conclusions

Generalizations cannot be drawn from this single experience but we set forth the following suppositions to be tested by others. Web-enabled graduate courses allow adult students to choose from a variety of options which will enrich their learning experience. Such courses allow students to use the instructional technology to positively impact each student's learning experience. Instructional technology can effectively impact higher education if used in a transformative way to enhance student learning. We know that the future of higher education will be dramatically different than it is today. And, we believe that one way faculty can impact students at this time is through a technology enriched curriculum that demonstrates the best practices in education, meets the variety of learning styles of students, and promotes intrinsic motivation to learn for graduate students.

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Creating and Delivering High Quality Streaming Dial Video

By: Steve Bonham

Track 2 - Technology Tools for Use in the Classroom
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

QuickTime Pro provides faculty and instructional support staff with a tool for developing high quality streaming instructional video resources. This 60 minute presentation will demonstrate the wide range of capabilities of QuickTime Pro for creating image animations and audio and video clips. You may see samples of such resources and download procedural handouts (saved as PDFs) at: http://www2.gasou.edu/cet/MovSamp

PROCEEDING

The Internet and capabilities of current web browsers (with the appropriate plug-ins) provide educators with an opportunity to enrich the learning experience of their students as never before. One method of doing so is to provide access to self-paced, media-rich instructional resources. These resources may be simple image sequences (similar to animated gifs but with the option for >256 colors), still images accompanied by audio clips, or animated images with integrated audio-- or video.

Apple Computer has distributed the software product QuickTime since 1990. The current version 5.2 is a platform independent tool that provides for playback/viewing of a variety of media. The upgrade (cost; approximately $30) to QuickTime Pro provides the user with the capabilities to create simple animations and/or audio/video clips that can stream (play while downloading) via the Internet.

This session will:

- examine pros and cons of digital video resources;
- demonstrate a few approaches to developing these resources;
- demonstrate recommended preproduction methods/strategies;
- demonstrate procedures for creating simple animations;
- demonstrate procedures for capturing and editing audio clips;
- demonstrate procedures for editing video clips; and;
- demonstrate procedures for delivery of such resources.

If a picture is worth 1000 words- how many words are movies worth? Why use Digital Video at all? Over 2500 years ago Confucius commented that "If I hear, I forget. If I see, I remember. If I do, I understand." Okay-- Confucius was a visual and a kinesthetic learner, and he was a proponent of active learning! Many of us and many of our students are too. Internet-delivered video resources provide learners with opportunities for media-rich, self-paced, user-controlled interactions. Offering such practice activities can only enrich traditional instruction. Providing such activities for on-line learners is critical to replace demonstrations performed in real classrooms.

Why QuickTime?

Yes, there are an awful lot of options out there for creating digital video. The high-end, professional video editing tools can do amazing things. However, they are so sophisticated only a full-time professional will master them... and these products are expensive! Do faculty members really NEED these tools? My short answer is no- in most cases they do not need or want them.

A little background. Our Philosophy at the Center for Excellence in Teaching is; "We teach faculty members to fish. We do not do the fishing for them." To teaching our faculty "to fish" we offer workshops, coaching, even make "housecalls" to facilitate them gaining basic skills in using new tools for developing instructional resources.

We offer training and support for site licensed software (MS Office), and for cross-platform, inexpensive, widely-adopted, easy to learn additional products-- IF they show promise for enriching teaching and learning.

QuickTime meets these criteria. IT is cross-platform (as a player and as a development tool). It is inexpensive ($30 to edit media). It is widely distributed. The editing basics can be learned a few hours. It is a "no frills" tool. If you must have slick movies with dazzling visual effects (there ARE good reasons NOT to use these) there are several other tools available.

The remainder of this session deals with the procedures for:

1. identifying, organizing, and preparing video content;
2. building the deliverable video resource; and,

3. embedding the video resource in a web page.

Including that information here would far exceed the 1500 words allotted so for your convenience procedural job aids saved as PDF files are available at: http://www2.gasou.edu/cet/MovSamp

CONCLUSION

Simple but instructionally sound digital video content can be created with inexpensive video editing tools such as QuickTime Pro. The process can take considerable time depending on the complexity of the subject matter and on the experience of the user with image, audio, and web page editing tools. However, the fact that such modules may be shared with peers in your discipline via Merlot <http://www.merlot.org> and valued as a peer-reviewed publication may offset the time and effort required.

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QuickTime Virtual Reality for Web Delivery

By: Charles Hodges
Track 2 - Technology Tools for Use in the Classroom
Interest: General :: Workshop :: Level: Beginner

Proceeding

ABSTRACT

Virtual reality (VR) can create a unique and interesting environment in which students at a distance can explore and investigate objects or scenes via the World Wide Web. Creating these VR components is a process that is much more simple than many believe. This paper will outline where using VR may be appropriate in instructional settings and describe the process necessary to create a VR panorama using Apple Computer's QuickTime Virtual Reality Authoring Studio Software.

VR and Instruction

I have been unable to find any existing research connecting learning to QuickTime VR panoramas specifically. There are however, several papers addressing VR in general as it is related to education. In 1999 Reid and Sykes touted VR as "The Ultimate Educational Technology". Several examples of how VR is being used in educational settings are listed in Young's paper "Virtual Reality on a Desktop Hailed as New Tool in Distance Education", though the paper does discuss certain problems faced by using VR in instructional settings. Many examples of QuickTime VR are can be found online with a simple web search on the terms "QuickTime VR panorama".

What about results? In a 1999 study Bowman et al found trends that suggest that students were better equipped to learn from lectures if they had prior exposure to certain materials virtually. Also, Bowman et al found trends suggesting that students exposed to a virtual environment are better able to understand the relationship between spatial and abstract information.

While designing instruction one may consider Keller's ARCS Model of Motivation. The ARCS model proposes four conditions that must be met for a leaner to be motivated. QuickTime VR could serve the "Attention" and "Relevance" components of Keller's model. Using a QuickTime VR component as part of an online lesson may gain the students attention by allowing them to navigate through an environment and explore. The relevance factor may also be addressed by allowing students to virtually visit locations, real or contrived, before lessons or discussions involving the locations take place. For example, a lesson on environmental impacts on a pond may be more relevant if the students could virtually visit a pond when physically visiting a pond is not possible. VR also would fit into Gagné's events of instruction as a strategy to gain the attention of a learner.

Kim and Song list learner motivation, possible financial savings, and safety issues as rationales for incorporating VR into instruction. Once QuickTime VR components are created, they exist. So, for instance, students from year to year would be able to virtually experience a location or object possibly saving the time and cost of an actual physical visit. Five guidelines for designing VR for instruction are provided in the paper by Kim and Song as well.

Creating a QuickTime VR Panorama

Here are the steps necessary for creating a QuickTime VR (QTVR) panorama: Plan, Shoot, Stitch, Make Panorama.

In the "plan" step you choose a location and collect the necessary equipment for the photo shoot. Locations that have as few moving objects, such as people, are best. Movement caused by phenomena like running water and blowing leaves do not cause many, if any, problems with the photos. When you have selected a location for your photo shoot, you should consider obtaining permission to take the pictures. Some private historical sites are especially concerned with photo rights. When asking for permission, be sure to indicate that your photos would be used for instructional purposes, if that is indeed the case.

The equipment I use for my photo shoots is: a digital camera, a camera tripod, and a small carpenter's level. My digital camera is a Nikon CoolPix 800. This camera has one feature that is important for the way that I shoot my photos for the panoramas. The camera's lens is centered directly above the tripod mount. This allows me to use a fairly cheap tripod. Many cameras are available with this configuration. If the camera's lens is offset from the tripod mount, a special VR tripod head would be necessary to allow the camera to pivot on the tripod with the lens centered on the tripod mount. My tripod is a Velbon CX 540. It is an inexpensive tripod.

Provided you have chosen a location and collected the necessary equipment, we are ready to move on to the "shoot" step. To shoot a full 360-degree panorama requires that you take a sequence of photos by rotating your camera on the tripod a set number degrees between each photo. You can create panoramas that are less than 360 degrees, but this paper will describe the process necessary to create a full 360-degree panorama.

My tripod has no original equipment that will allow me to rotate the camera through set degree increments. Using masking tape, a ruler, and pen I added a ring of increments to the head of my tripod that measures twelve 30-degree increments. This is a good number of pictures to start with, though with other cameras you may need to increase the number of photographs. There may be some trial and error necessary to determine the number of photos necessary for your camera. To begin taking your pictures, set up your tripod and camera in the desired location. Having your camera level is essential for creating smooth, high quality panoramas so take the time to establish a sturdy and level camera site. My tripod has a small level incorporated into it. I use my carpenter's level to double check the tripod's level and to make adjustments, if necessary. Check for level in at least two different directions on your tripod. Once I have a level and sturdy camera site I take my pictures. I take one picture at each of the twelve increment marks on my tripod head. If your camera has a remote control, use it. The fewer times you have touch the camera once it is prepared, the less likely you are to knock it out of alignment for your pictures. Moving the tripod or knocking it out of level will mean that you start over leveling the tripod and camera set up. Also, as you take the necessary pictures to produce the panorama, you do not want objects that move a great deal or ones that will be in more than one of the sequence of pictures. This can cause "ghosting" and other inconsistencies in the next step of the process. Once you have your pictures, transfer them to your computer.

A set of sample photos is available at:

http://homepage.mac.com/qtvrchuck/ for your experimentation.

Now we are ready to use the QuickTime VR Authoring Studio software to create the panorama. This is the "Make Panorama" step. In this discussion we are using version 1.0 of the software and Mac OS 9.2.2. The next two steps will use this software. When we have completed these steps, you will have a finished QTVR panorama of your chosen location.

Launch the QTVR software. In the "File" menu select "New" and "Panorama Stitcher" in the corresponding submenu. A menu will appear on your screen. Assign your panorama a name and location on your computer and click the "Save" button. For the purposes of this discussion I will name my file "learnVR". You should now see a window titled "Panorama Stitcher:learnVR" on your computer screen. In that window be sure that "Images Wrapped" is checked if you are making a full 360-degree panorama. We are, so it should be checked. Select your camera lens in the "Lens:" pull-down menu. If your camera settings are not listed, get the manual that came with your camera. Click on the "New" button to create the lens settings for your camera. Enter a name for yours lens and the focal length of your camera lens in the appropriate boxes. Enter "30" in the

"Recommended degrees between images" box since we took twelve pictures, each 30 degrees apart. Click "Calculate" to have the software calculate the vertical angle of view measurement. You should now see the "Lens Calculator" window. Adjust your film size, if necessary and click the "Use" button to select landscape or portrait mode. For my camera the settings are: focal length = 38 mm and "Landscape".

Now you are ready to add your photos. You can do this simply by dragging a folder containing your twelve photos to the lower portion of the "Panorama Stitcher:learnVR" window. Your camera probably named your photos sequentially. This is good. If it did not do so, you should before adding your photos to the stitching window. Names like "photo01.jpg", "photo02.jpg", ... , "photo12.jpg" work well. You may need to rotate your photos once they are loaded using the "Rotate" button in the "Panorama Stitcher:learnVR" window. Rotate them so the photo orientation is such that you can view the pictures like they were taken. Now click the "Stitch Pano" button at the far right on the window. In a few minutes, the software will generate a stitched panorama photograph titled "learnVR.pict". A window titled "learnVR.pano" will result when the stitching is complete. This is what your QTVR panorama will look like. You may also navigate and zoom in and out of this window to set initial settings for the QTVR panorama. If you are pleased with the result, click the "set playback settings" button in the "learnVR.pano" window to create the final QTVR panorama. The end result after a few moments is a QuickTime movie named "learnVR.pano". This movie is a navigable QTVR panorama ready for web delivery or local computer use.

If you so desire the panorama photo "learnVR.pict" can be edited with graphics programs like Photoshop. To do this, quit the QTVR Authoring Studio and perform your image adjustments. You may choose to brighten the photo or add annotations to certain portions of the photo. If you do edit your photo, be sure that the height and width dimensions of your photo are evenly divisible by four. This is necessary to make the final QTVR panorama. Once you are happy with your image, you may continue with the QTVR Authoring Studio. Launch QTVR Authoring Studio. In the file menu select "New" and "Panorama Maker" in the corresponding submenu. Add your edited panoramic image via the "Add Image..." button and click the "Make Pano" button to generate your final QTVR panorama.

The finished QTVR created from the sample photos referenced above is available online at:

http://homepage.mac.com/qtvrchuck/

I highly recommend the book "QuickTime for the Web for Windows and Macintosh" 2nd edition if you plan to work with QTVR or other elements of QuickTime. It is an excellent reference.

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The Help Desk as a Learning Resource

By: Bob Lhota
Track 2 - Technology Tools for Use in the Classroom
Interest: General :: Lecture/Presentation :: Level: All

Proceeding

ABSTRACT

Computer service departments have used help desks to provide and track their services. Dyersburg State Community College in the Spring of 2001 began using the help desk concept as a learning resource. It provides assistance through the Help Desk web page and through the telephone to students using technology in their learning. It also is a valuable resource for on-ground students using the Learning Resource Center.

The Help Desk as a Learning Resource

Basic Assumption: The basic assumption for this presentation is that the computer in its various forms has become an essential part of the learning process, at the same time radically changing it. It is not merely a tool. It has changed the entire learning paradigm. In the information age, information and learning are bound together as a coherent process. The first steps in learning are information skills. Information skills are built upon computer skills. Like the critical threshold when writing developed changed the learning world, this critical threshold in information technology changed the learning world again. Margaret J. Wheatley in Leadership and the New Sciences puts this new paradigm into focus for us. "...Information is a very different 'thing'...information is a dynamic, changing element, taking center stage. Without information, life cannot give birth to anything new..."(94-95)

As the information age began and intra and inter networks developed, the Help Desk became a handy tool for computer services to provide assistance to users in an effective and efficient manner almost anytime and anyplace. It also provided a mechanism for tracking service requests and responses. Online classes added a further dimension, the need to provide technical assistance to online learners.

Online Learning: Dyersburg State Community College has been involved in distance education since 1988 with the introduction of several telecourses. In Spring 2002 there are 34 courses with approximately 800 students enrolled. Dyersburg State in the Spring, 2002 had a headcount of 2,228 and an FTE of 1,513. Online classes account for a good percentage of the headcount and FTE.

In 2000 DSCC Teaching, Learning, Technology Roundtable (TLTR) set up four benchmarks for Online Learning Support:

- Online students receive information about programs, admission requirements, fees, books, and support services
- Online students have access to technical and learning assistance
- Online students are provided training in courseware and information skills
- Online students receive timely responses from student service personnel and procedures are in place to handle complaints.

Dyersburg State Community College in the spring of 2001 began to use a help desk as a learning resource to achieve these benchmarks. Borrowing the service model used by computer services, the Learning Resource Center created a Help Desk that provides online learning assistance for distance learning students. Quickly realizing that most classes at DSCC have some online component, the Help Desk mission was broadened to include any student using information technology in their online learning. Finally, it was further expanded to included students using information technology in the learning resource center on campus.

Information Gateway: The Help Desk is set in the framework of this Information Gateway and located in the LRC and is supervised by the LRC Technical Services Assistant. The LRC information gateway includes:

- 118 computers in LRC 30,989 uses in Fall +4%
- Information gateway web page (Points to Help Desk Web Page) 11,400 users in Fall 28% of LRC use
- Information skills instruction 60 sessions 1,147 Students
- Online learning CD 884 duplicated in Fall
- Online/CD databases 35, 792 searches in Fall +30%
- Multimedia workstations 28 student multimedia projects

Help Desk Operation: Computer technology students man the Help Desk, some doing their final practicums for their degrees. Five to six students each work 20 hours per week for an annual cost of $18,000. The cost is supported by $5,500 from the Technology Access Fee and $12,500 from the LRC distance learning budget. The Help Desk is available by e-mail, phone & in person during LRC Hours, Mon-Thur 8-8, Friday 8-4, Sat 9-1, for a total of 60 Hours per week.

The Help Desk is prominently displayed on the "College at Home" Page, in every online class syllabus, on the DSCC Web Page, on the LRC Information Gateway Web Page, and on Campus Pipeline Intranet to provide students with quick and easy access. Every distance learning student receives a Distance Learning

Resources CD that has tutorials on all of the learning resources including the Help Desk.

The Help Desk will answer any question or request for assistance within 1 or 2 hours during weekdays, within 12 hours during week nights and within 48 hours on Saturdays & Sundays. Many questions and requests are answered immediately. Student assistants that are trained and experienced in computers and using online services man the Help Desk. They receive additional training in providing learning assistance. When the question or request is above their level of expertise, they refer the question to the appropriate DSCC staff member. The Help Desk assistants e-mail or call the appropriate DSCC staff member and follow-up on the response from the staff member. No student is left hanging because they could not reach the appropriate DSCC person or because they did not receive any answer at all. An added benefit of the Help Desk is that it serves as the on-ground Help Desk for the Learning Resource Center with immediate assistance.

Help Desk learning services include assistance in using WebCT, Campus Pipeline, and CDs; Tutorials on and direct assistance with various software including Netscape, Internet Explorer, Word, Excel, PowerPoint; zipping and transferring files, assistance in installing plug-ins; access to online tutoring; a Learning Style Inventory; an Online Readiness Survey; Regents Degree Programs; Technology Toolkit; Browser Tune-up; Information Gateway; Ask the Help Desk.

Help Desk Software: The Help Desk design and development began with a search for Help Desk software. DSCC looked at one free and four commercial products. All the products were focused on the technology and were designed for a computer service department. The free software was not robust enough to handle what was needed. The commercial softwares were too complicated and did not focus on the information and learning needed. We dreaded the thought of designing our own! Someone suggested Microsoft's Task Manager that was being used for requests and tasks in other applications. It had been customized as much as possible for these applications.

Following this model, Task Manager was customized for the Help Desk. Help Desk, Task Manager, Frequently Asked Questions, Contacts, Calendar, and Archive were added to Outlook Shortcuts. Next the Tasks Toolbar was customized with the following categories: Question, Answer, Action, Status, Date Due, Category, Name of Assistant. Additionally, an archive file and an Outlook email account were set up. But we are still searching for commercial software but have not found any that match our needs.

Help Desk Learning: Since the focus of the Help Desk is to be a learning resource, what types of learning have developed?
The most basic is the one-on-one assistance and tutoring by phone, email and in person. Online learning skills include an assessment of online readiness, determining one's learning style and online techniques; using username and password, logging in processes, using WebCT class software, zipping and transferring files.

Information skills learning includes: following directions, accessing information, processing information, and analyzing information. Since assistants have had many of the classes, they can provide course content tutoring. Lastly, users develop their communication skills in working with the assistants.

Conclusions

What we have learned so far? First of all the LRC cannot no longer exist without the Help Desk. There must be at least two students for peak LRC use periods. The Help Desk Web Page needs to be evaluated and updated continually. To better evaluate Help Desk services, a satisfaction survey needs to be developed and given to students. Finally, a chat option needs to be explored.